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**Original Communications.**

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ARTICLE I.

**PERINEPHRITIS: FIFTEEN ADDITIONAL CASES IN CHILDREN, COMPLETING A TOTAL OF TWENTY-EIGHT.** Remarks on Diagnosis and Prognosis. By V. P. GIBNEY, M.D., of the Hospital for the Ruptured and Crippled, New York; Fellow of the New York Academy of Medicine; Member of the American Academy of Medicine, etc., etc.

Although previous papers on this subject would seem to render unnecessary additional publications by the same author, it has always been my firm conviction that full records of cases are never out of order, however common or hackneyed the theme may be. Touching the one under consideration, comparatively few American observers have made contributions; and I cannot but feel convinced that many cases of obscure lesion about the hip-joint or spinal column have occurred to many practitioners of large experience. I cannot but believe that many speak flippantly of curing a hip disease, for instance, which was nothing more than a perinephritis that had undergone resolution.

It were unnecessary for me to continue my excuses for publishing the following clinical record. These cases are a continuation of nine in a paper in *The American Journal of Obstetrics and Diseases of Women and Children*, April, 1876, of three in another paper in *The American Journal of the Medical Sciences* for April, 1877, and of one in the same journal for Oct., 1878, page 403. The numbers therefore will be readily understood.

CASE XIV. *A tumor first observed in ilio-costal space; a few days later one on thigh; the latter opened by incision. Subsequent connection between the two; cure complete in five months; permanency of same verified by examination two years and four months afterward.* John D., aged three and one-half years, was seen first on the 4th of May, 1877, in the out-door department, and in addition to a general anæmic condition there was observed a soft tumor in the right lumbar region just above the crest of the ilium. It was oval in shape and its base  $2\frac{1}{2} \times 3$  inches in area; the skin was not discolored, and there was deep fluctuation. There was a point of induration on posterior aspect of thigh, upper third, same side and the circumference of the limb here was one inch greater than that of the fellow limb. The motion at the hip was smooth and painless although complete extension of thigh could not be made. No evidence of disease at this joint or in the vertebræ could be detected. There was no periosteal thickening about the crest of the ilium.

The child had always been feeble but never lame before the invasion of present disease which dated from the beginning of March. A little stiffness of the thigh, pain at knee, slight febrile disturbance were the first symptoms, and these continued with very little increase in severity until the first of May, three days before applying at the hospital for treatment, when the tumor first made its appearance, and the walking became more difficult.

There appeared to be no indication for surgical interference and an iron tonic was all that was prescribed; but on June 1, the femoral abscess was opened by incision and about three ounces of pus evacuated. This remained open for a few days, closed, then a little later reopened spontaneously while the perinephritic abscess continued slowly to increase in size, without

any marked constitutional disturbance. The thigh flexors were contracted however, and the gait was very awkward.

July 28th.—An unusual amount of pus escaped from opening on thigh, and immediately after this gush the ilio-costal tumor collapsed. This did not make its appearance again, and the symptoms, heretofore quite alarming, began, now to be considered of trifling import. The deformity of the thigh disappeared and it was recorded on—

Sept. 5th.—Sinus has been closed for a week, no sign of re-opening, no pain or lameness, no ilio-costal swelling; *cured*.

Feb. 25th, 1878.—Without lameness, and has had no relapse whatever.

Jan. 6, 1880.—Examined carefully this date and still no sign of disease about spine, hip or loin. Has not had any relapse since date of last note.

CASE XV.—*Cure by resolution; confirmed by examination two and a half years later.* Anne C., set 5, came under outdoor treatment July 10, 1877, with a history of lameness, febrile disturbance, and pain in right loin of two weeks' standing. The invasion was acute and was without known cause. She had been walking lame from the first day, and the lameness was greater towards night. She moaned through the night, and was evidently losing flesh, probably from the unrest. The temperature on the morning of her first appearance at the hospital was only  $98\frac{1}{2}^{\circ}$ , and the child did not appear to be sick. There was, however, decided lameness, a rigidity of the spinal column as she stooped, but no tenderness on concussion here, and no angular deformity. The right thigh could be easily and voluntarily flexed to the normal extent, abducted and rotated, but could not be extended beyond an angle of about  $135^{\circ}$  without causing pain. There was no tenderness at the hip-joint, but there was marked tenderness in the right ilio-costal space with deep infiltration, and a distinct area of fullness. There had been no difficulty in micturition, and the mother had not observed any change in the appearance of the urine. A diagnosis of perinephritis was made and a fly blister ordered over this region.

July 10th.—The blister has produced the desired vesication and the surface has been poulticed every six hours. The child

this morning is very much better; she walks nearly as well as she ever did; stands erect; the thigh can be extended to  $180^{\circ}$  without any difficulty; the stiffness, so marked on stooping, has disappeared and the fullness in ilio-costal space is scarcely perceptible.

July 25th.—There is no longer any muscular contraction; there is no pain, no sleepless nights, no impairment of appetite, no lameness unless after a long walk; and with this single exception no sign of disease can be detected.

September 3d.—The lameness has disappeared entirely and the patient is discharged as cured.

November 5th.—Calls by request for examination and the cure is fully established.

January 18, 1880.—I visited the house to-day and found the girl as free from disease or lameness as when I examined her two years and a half ago.

CASE XVI.—*At first regarded as hip-disease and treated with weight and pully; diagnosis clear on appearance of tumor; cure by resolution under the hot-water douche; two and a half months' duration.* Edward R., aged five and a half years, came under treatment in the out-door department August 1, 1877, and the following history and observations were recorded: It has been noticed for four weeks that the boy walked lame, favoring left side, and that gradual flexion of the thigh on the pelvis has taken place. This lameness and thigh flexion began rather suddenly with pain in the left loin on motion, and pain in back and over abdomen on very slight pressure. These symptoms were ushered in by a chill, and every day for three weeks there has been a slight chill followed by fever. Two children in the family had scarlatina four weeks ago, while this boy escaped to all appearances. His tongue to-day is a little coated and the mother reports that it has been heavily coated. He is unable to stand alone, but when he is held up or when he lies in the dorsal decubitus, the left thigh is flexed at an acute angle on pelvis, and attempts at passive extension cause pain and resistance. Complete flexion, rotation, abduction and adduction can be made without pain or resistance. There is no infiltration about the trochanter or in the groin. There is distinct fullness in the whole of the left



ilio-costal space extending across the spinal column and below the crest of the ilium with deep fluctuation. The body is covered with sudamina; the boy is quite thin; the pulse is 140, the rectal temperature is  $102^{\circ}$  (a. m.); the bowels are constipated; the urine is straw-color, has a specific gravity of 1010, contains no albumen, and is about normal in quantity. A microscopic examination is not made. The mother reports that a physician in Hoboken, N. J., where she lives, has been treating the boy with weight and pulley for hip-disease.

Hip-disease is readily excluded this morning on this our first examination, and a diagnosis of primary perinephritis made without any hesitation. An iron tonic is ordered, and cold water applications are to be made to the lumbar region.

August 13th.—Still much emaciated, and the deformity of the limb is unchanged. The fullness has developed into a well-marked tumor, with fluctuation more distinct while the skin at summit is discolored, and a speedy opening is expected. The semi-circumference of the body here is thirteen inches against eleven inches for the right side. There is a uniform antero-posterior curvature of spine from the mid-dorsal region to coccyx without ankylosis at any point. There are still no signs of disease at the coxo-femoral articulation.

The hot water douche is now ordered night and morning, ten minutes application, the parts to be protected with cotton-batting in the intervals.

August 21st.—The angle of deformity with which the thigh is held is about one-half less than it was at date of preceding note. The boy can stand now; has less pain; rests well nights; eats well, in fact is a great deal better. The tumor, however, is present, though not so large, as shown by measurement. The upper third of the thigh this morning measures one inch larger than its fellow. The same treatment to be continued. Without transcribing the notes at different visits it is sufficient to abstract the same by stating that he soon began to walk a little, the fullness disappeared and by September 12th it was recorded that he walked and it was difficult to detect any limp whatever, that he had regained strength and flesh; was quite active; that the thigh could be easily extended over the normal arc; that the spinal column

was straight, and that only a shade of fullness remained. Discontinue treatment.

October 5th.—Called, and after a careful examination negative as to result, discharged cured.

CASE XVII. August J., aged six, came under treatment as an out-patient August 10th, 1877. It was difficult to obtain a satisfactory examination so excessively tender and sore was the little fellow; he was not able to stand or to walk, even with assistance, and as he lay upon the examining table the left thigh was acutely flexed on the body, all efforts at passive extension being resisted. When such was attempted, the boy screamed aloud and pressed his thigh with the hands. Flexion and rotation could be made easily, and there was no tenderness in the hip-joint; it was purely peri-articular. In the left loin there was a marked fullness amounting nearly to a tumor. There was great tenderness in this region, dulness on percussion. There was no reliable evidence of spinal lesion, although the spinous processes were very prominent, yet this was due to the great emaciation. The pulse was 120, resp. 25, temp. 103°. His urine was normal in color, contained no albumen, micturition was attended with some pain. The boy sickened on the morning of July 16th, being perfectly well and free from lameness the day before. He was taken with high fever, soon got lame and had crying spells on micturition. His prepuce was found to be long, though glans could be exposed, and there did not seem to be any genital irritation. The only cause that presented was that the boy said a play-fellow kicked him in the groin on the 15th of July. The treatment was an iron tonic and the hot water douche.

August 14th.—The semi-circumference of the left side to-day measured a little less than it did on the occasion of first visit, the difference being now three-fourths of an inch. The boy is better every way; rests well nights; has much less pain on micturition and the tenderness is much less marked. His urine has a specific gravity of 1020, is normal in color and does not contain albumen. Continue treatment.

August 22d.—To all intents cured: the fullness and induration have disappeared; he walks and runs with scarcely an appreciable lameness; has no pain; is gaining flesh.

CASE XVIII. *Very acute; hot water douche failing to induce resolution, incision at end of third week; recovery.* Michael S., aged five, was first seen in the out-door department August 23, 1877. He had been lame just one week; had come in lame one afternoon, reporting that he had had a fall that morning; went to bed complaining of his limb and got up next morning feverish. Had been growing rapidly worse; bowels constipated; losing flesh as much probably from loss of sleep as from the gravity of the disease. Already a tumor filled the right ilio-costal space and the characteristic deformity of the thigh was present. This side measured one inch greater than the left, and the thigh at its upper third sustained the same relation to the left as to size. There was no tenderness or infiltration in the groin or in the iliac fossa, but higher and above the crest of the ilium the tenderness was exquisite. The hot water douche was ordered as in the two cases just recorded, and the dialysed iron was prescribed.

August 27th.—No relief from pain; there is marked fluctuation and the case is much worse. The douche was continued a few days longer with apparent relief, but this was only temporary; all hope of getting resolution was abandoned and the abscess finally opened by incision September 8th, when exit was given to about six ounces of thick pus. The discharge ceased in three days, and on September 12th the wound had closed, the sac well emptied and both sides equal in measurement. He walked in erect this morning, although a limp was perceptible. A fortnight later his condition was the same and he was discharged conditionally, *i. e.* with orders to call should any sign of relapse occur. He was, at my request, April 12, 1880, examined by my friend Dr. L. Emmett Holt, who found that the cure had been permanent.

CASE XIX. *Perinephritic and perityphlitic abscess; secondary pyeletis; recovery with fistulous (?) track.*

Joseph H., æt. 6, came under treatment November 21, 1877 with the following symptoms: somewhat emaciated, excessively irritable, pain, tenderness and fulness in right ilio-costal space, flexion and outward rotation of thigh resisting extension but permitting quite freely other movements; tenderness on pressure in iliac fossa, rectal temperature  $101\frac{1}{2}^{\circ}$ ; a burning sensation along urethra on micturition, especially at end of penis, which

appears congested, and a frequent desire to urinate (12 times last night); urine has a specific gravity of 1.025, high color, containing a flaky sediment but no albumen.

Three weeks ago he was taken sick, before which time he had been in excellent health and free from any lameness. He was feverish at the beginning, had colicky pains and flexed thigh for relief. His bowels have been moving daily without medicine, he is very restless at night, has no appetite and is losing flesh.

The hot water douche was ordered and a mixture of chlorate of potassa and tincture of the chloride of iron prescribed. The boy lived some distance from the hospital and the mother was so averse to having him treated as an in-patient, that we consented to treat him as an out-patient. The mother called, on Dec. 3d, to report that the boy was "sinking," lay on his face constantly, suffered almost continuously, and seemed to grow rapidly weaker after two or three douches, which were then discontinued. She brought a specimen of urine which was found to be loaded with pus (the deposit filling three-fourths of the conical glass.) With the microscope I found pus corpuscles in great abundance, a little blood, some epithelial cells, but no casts. The specific gravity was 1020, and the specimen contained no albumen. Flax-seed poultices were ordered and Wyeth's preparation of beef wine and iron was substituted for the potash and iron mixture.

December 8th.—I visit the patient to-day and find him curled up in bed, lying on his face and knees, and out of this position it is very difficult to get him. He is markedly emaciated, the thigh is acutely flexed on pelvis, tenderness along the thigh and over abdomen, right side; in the right loin is a distinct tumor, the skin over which is not discolored. I learn that he does not pass so much urine as he did, and the specimen which has been saved for me is free from any deposit, in fact is comparatively clear; his rectal temperature is 100°. His bowels are now constipated; he has not vomited at any time. Hot fomentations are ordered and the treatment otherwise is unchanged.

December 12th.—The mother reports that another tumor has appeared in the groin, since my visit on the 8th, and that the lumbar tumor has increased in size.

December 13th.—I take with me to-day my friend, Dr. Ripley,

and we find as the mother stated yesterday, an acuminate tumor in the groin above Poupart's ligament, and the former one much larger than at last visit. We decide upon immediate incision, and a bistoury is thrust into the inguinal tumor, when a large quantity of thick pus is evacuated, both tumors disappearing. The fluid toward the last becomes bloody and mixed with this is an amber colored fluid (urine?) which gives a distinctly ammoniacal odor. A tent is inserted and stimulants ordered unsparingly.

After this the case did well, the discharge continuing quite freely for a few days, and on the 18th the urine was normal in color, had a specific gravity of 1015, had an acid reaction, had no deposit and contained no albumen.

January 12th, 1878.—The boy walks into the office this morning with a halt that is scarcely perceptible; he has grown stouter; the wound is closed, this having occurred on the 8th; flexion and rotation are perfect, while complete extension is not yet possible. Discontinue treatment.

January 19th.—Abscess refilled and opened spontaneously on the 17th, though attended with very little constitutional disturbance.

March 23d.—A stout, hearty boy walking without any lameness, though there is a little fulness in lumbar region and a slight discharge from the incision wound.

December 9th.—The patient is brought to the office by request, and from the mother it is learned that the abscess in ilio-costal space opened spontaneously in June last, discharged quite freely for a month or six weeks, closed, opened again a week later, ran for three weeks, closed again, to open after two weeks, and then finally closed. She stated that at each time of opening the odor of the discharge was like that of urine. There is no opening at present and no deformity. The cure seems complete.

April 10th, 1880.—I examined the child and find the cure as to locomotion and freedom from deformity well established; yet there is a crust or scab over the closed sinus in ilio-costal space and the mother tells me that occasionally the boy picks this off when there is a mere oozing for a day or two, then the formation

of a new scab. He has no difficulty in micturition, and the color of the urine is normal.

*Remarks.*—This case presents some points of interest to which I wish to call attention. I cannot fully satisfy myself now, on reviewing the case, whether the pyelitis preceded or followed the perinephritis. The invasion of the disease was marked by colicky pains—"cramps" as the mother described them—and she soon afterwards (before or after the development of the tumor in the loin no one knows) found the boy passing his water quite freely, complaining of a burning sensation referred to the end of the penis, and his urine containing a deposit which, from her description, must have been pus. An ordinary pyelitis from obstruction caused by a calculus may have been the initial inflammatory lesion. Yet, in view of the free flow of urine all the while and of the acuteness of the attack with flexion of the thigh *ab initio*, the subsequent discovery of flaky deposits in the urine voided, I am forced to the conclusion that the perinephritis was primary and very soon invaded the pelvis of the kidney itself. The course of the disease makes the cellular tissue in the iliac fossa the last attacked, giving a perityphlitis. When the complication arose we had constipation, viz., between December 8th and 12th.

The subsequent history of the case pretty well establishes the existence of a fistulous opening from the pelvis into the circum-renal areolar tissue. This is the first case I have encountered with renal complications of any significance. Nieten refers to several in his article.

CASE XX. *Recovery by Resolution.*—William C., æt. 3, came under our observation June 22, 1878, at which time there was marked dullness in the left ilio-costal space, with tenderness, flexion of thigh, lameness, marked loss of flesh and a rectal temperature (morning) of 103°. There was likewise a short cough present, but a careful physical examination of the thorax was attended with negative results. Four weeks before this date he was perfectly well and was not lame. His illness began with a restless night, and next morning he was feverish, complaining of pain in the left loin. Pain here was the only symptom for a week, then lameness was added, and, at the end of the second week, he was unable to walk at all. About this time also there appeared



a "lump" in the loin and the mother poulticed it for the next two weeks, in which period it disappeared, and, as before observed only the dullness and induration could be perceived in this region on the 22d of June. The bowels have not been constipated. On the contrary, they have been loose. There has been loss of appetite, loss of flesh, febrile disturbance, with free perspiration every evening, etc., etc.

A tonic was ordered and the mother was directed to employ hot fomentations continuously. The patient returned on the 25th, three days later, and could walk with tolerable ease, had less tenderness, the dullness was less marked. The mother reported less pain. The rectal temperature was 98°. The cure seemed nearly complete. The case was not seen again, but on April 13, 1880 I learned that the boy had been long since well.

CASE XXI. *Abscess opened on twenty-fifth day; cure one month later.*—John C., æt. 4 yrs, came under treatment in the out-door department August 6, 1878. He was perfectly well up to August 2nd—four days ago—when he had a slight fall, striking on the right side; had a little fever same night and a little since that night but he has continued at his plays as if nothing had happened. The mother reports that his urine, since the fall, has been scanty and high colored. He has had no localized pain unless the right limb be extended; then he refers the pain to back and loin. The thigh is strongly flexed and deep in the lumbar region an induration can be made out. Pulse, 140; temperature, 102½°. The joint is free from tenderness. Hot fomentations ordered and a tonic. He found relief for a few days, but the induration increased, a tumor appeared and finally an incision was made, August, 31st. The urine was examined chemically and microscopically twice and nothing found.

The subsequent progress of the case was towards a rapid recovery, which was fully established by the 28th of September, when a careful examination was made and a cure pronounced. The details differ very little from those of the other case and are omitted.

CASE XXII. *Diagnosis impossible during the first week of observation; this too the third week of the disease; profuse suppuration; perfect recovery.*—Katie D., æt. 10½ years,

presented at the office August 22, 1878, with excessive spinal tenderness and hyperæsthesia of the whole of the left side of the body and thigh, flexion of thigh on pelvis at an angle of  $135^{\circ}$  from contraction of the psoas, movements in flexion and rotation being perfect, absence of tumor or infiltration or dullness in iliac fossa or ilio-costal space. The child appears very sick, and a prolonged examination this morning is not made. She complains of much pain in epigastrium, and the tongue is coated. By way of clearing up the diagnosis, santonine is ordered. It must be stated, however, that all these symptoms were only of two weeks' duration. The girl was running across the floor one day, and fell, her left side coming sharply in contact with the corner of a table. She complained of a little pain at the time, but this soon passed off, to reappear at the end of three days; then she became lame, grew restless nights, etc., etc.

There was a history of rheumatism in the mother, but nothing else of an hereditary nature on either side of the house.

Two days after her first visit it became impracticable for her to attend as an out-patient, and two gentlemen associated with the hospital—Drs. E. Swasey and L. E. Holt—attend her at her home. They observed the case very closely, and kept very full records, from which I shall make an abstract as briefly as possible.

August 24th.—They find her abed, lying on the left side, thigh flexed to  $110^{\circ}$ , spinal column deflected a little to the right, tenderness as before, and a frequent desire to urinate, say every ten or fifteen minutes. The bowels are not constipated; there has been no action from the santonine, and the diagnosis is still obscure. A fly-blister to lumbar spine, and belladonna gr.  $\frac{1}{8}$  (.008) t. d. ordered; also liq. morph. sulph., U. S. P., p. r. n.

The child continued to suffer night and day, only finding relief when under the influence of the morphia. It was not until the 31st of August that Dr. Holt was justified in making the diagnosis of perinephritis, and even then there was no tumor present. The urine contains no albumen on this date, is amber in color, has a specific gravity of 1005, and a microscopic examination is attended with negative results.

September 10th. The patient is still suffering, and is still losing flesh. Has chills, followed by fever, every day, although

quinine is administered to physiological effects. To-day, for the first time, the tumor presents, and there is indistinct fluctuation. The deformity of the thigh is unrelieved.

September 13th.—Opened by incision, and one pint of pus evacuated, with great relief immediately. This is now six weeks since the first symptoms developed, and four weeks since the patient has been confined to bed. From this time forth the notes indicate a rapid improvement, and by the 26th of September the wound had closed, the fullness had disappeared, and the child was able to walk with very slight lameness.

October 2d.—All movements at hip perfect, except a little resistance to complete extension.

November 4th.—Called at the office, by request, for final examination, and the cure was found to be complete; no resistance to extension, no lameness, no tenderness; child has regained flesh and strength; no difficulty in micturition, and the urine is normal.

CASE XXIII. *Directly traceable to traumatism; cure by resolution in five weeks.* Eda M., aged nine years, admitted to the hospital July 9, 1878. The child was in perfect health to every appearance one week prior to admission and fell across a bench, at school, striking her loin against its edge. She did not experience much pain at the time but in the afternoon of same day was taken with nausea, vomiting and increased pain in the side, aggravated by walking. The father next day made an inspection of the side, but could find no evidence of contusion superficially; there was tenderness here and the child walked lame. She became feverish toward evening, though rested fairly at night and the bowels have been regular until three days ago, since which time they have not moved.

She is poorly nourished, stands with the left limb advanced and semi-flexed at hip and knee, walks with a marked limp favoring the spine as well as the hip. As she stoops the spine is inflexible. The ilio-costal space is fuller on left side than on right, the erector spinæ stands out prominently, there is broadening of the nates on this side and the trochanteric dimple is effaced. There is absence of spinal tenderness on pressure, percussion or concussion, but there is very decided tenderness in the right loin

and over the right sacro-iliac junction. There is a shade of dullness in the region above mentioned and a careful physical exploration of thorax and the remainder of abdomen fails to detect any abnormal signs. The limit to which the thigh can be extended is  $135^{\circ}$ , while movements in all other directions are perfect.

Hot fomentations are ordered to the loin and an iron tonic is prescribed. The bowels moved after a day or two, but still the tenderness and pain and flexion of thigh continued. Finally toward the latter part of the month the symptoms abated, and by August 16th the case was pronounced cured.

August 30th.—“Has gained in flesh; stands and walks perfectly; no pain or tenderness about loins or hip; no muscular contraction; no limit to normal motion in any direction. Discharged cured.”

CASE XXIV. *Large tumor threatening suppuration; rectangular deformity of thigh; cure complete by resolution at end of four months.* Kate K., æt 7, admitted to hospital September 3d, 1878, coming from a wretched part of the city, the family, however, giving a good history. The child herself presents evidences of mal-nutrition, and has been subject for the past two years to epileptic attacks, but there has been no paroxysm now for three months.

On the 8th of August, without any known cause, she began to complain of pain in her left loin and across the lumbar spine, at the same time flexing the thigh of same side on the abdomen; had considerable febrile disturbance that night, and every night for a week following. The bowels were constipated subsequently. The child was brought to the out-door department on the 12th of August, and at that time walked with marked limp; would not permit the thigh to be extended beyond an angle of  $145^{\circ}$ , though permitting free movements in all other directions. The temperature that morning was  $100\frac{3}{4}^{\circ}$ . No fulness or tenderness could be discovered in the ilio-costal space, or iliac fossa. A diagnosis of perinephritis was made by Dr. E. F. Horst, a member of the hospital staff, and the patient advised to come into the wards. The parents did not return again with the child until the date above mentioned, September 3d, and during the interval the symptoms had increased in severity, so that to-day she is much thinner than

at last visit. Stands in a very constrained position, barely able to touch the floor with toes and ball of foot; walks with body thrown far forward and to the left, the hand resting firmly upon the knee. The angle of deformity of thigh is now  $90^\circ$  and efforts at passive extension beyond this cause much distress. In the ilio-costal space there is well marked fulness, almost circumscribed, extending from a line one inch to left of spinous processes to a perpendicular let fall from the nipple, and the semi-circumference of the body over this fulness is  $1\frac{1}{8}$  inches greater than that of the corresponding side. Position does not change the tumor, and there is no fluctuation perceptible; no acumination. There is decided tenderness. The limbs are equal in length, but the left thigh at its upper third is one-half inch larger than the right. Rotation is easy and flexion causes relief. The treatment is the same as that adopted in the preceding case, and at no time during the subsequent progress of the case was there any great constitutional disturbance, in fact this case differed materially from the other cases in the freedom from constitutional disturbance. At no time did the temperature rise above  $101^\circ$ , although on September 24th it is recorded that there is marked induration with swelling, heat and redness extending from spine around left side to median line in front; acumination threatens near the anterior superior spinous process.

October 1st.—Since last note symptoms have materially diminished in severity; thigh is much straighter and it actually seems as though the tumors were decreasing by resolution. From this time forth it did continue slowly to diminish, the child became quite active, and at the date of her discharge, January 7th, 1879, motion at the hip is perfect; general health excellent; there is no fulness above or about the crest of the ilium; case cured.

CASE XXV. *At first acute, then becoming chronic; ilio-costal tumor, with usual thigh deformity; disappearance of both under repeated blistering; cure by resolution at end of six months.* Golda G.,  $\text{æt. } 14\frac{1}{2}$  years, admitted to hospital July 21, 1879. Was perfectly well about four months ago when the disease for the relief of which she now seeks relief was first developed. The girl had for some time prior to this been actively employed at a

sewing machine, and one day without any provocation, she experienced a sharp pain in the right lumbar region. This continued and increased to such severity that in three days she took to bed, where she was confined for three months with high fever, loss of flesh and pain so intolerable at times that relief was afforded only by opiates. There was excessive tenderness all along the lumbar spine in lumbar region, and down the thigh, right side, so that the slightest movements caused intense suffering. She preferred to lie on the right—the affected—side, and would keep the thigh flexed on abdomen. The bowels moved regularly every day, and there was no renal or vesical trouble so far as the parents knew, i. e., the urine was not voided too frequently, and its passage was not attended with pain. After three months she got out of bed, but was unable to get about unless assisted. It was not until two weeks ago that she attempted to go out of doors, and then was taken by the family physician to consult a prominent specialist, who seems to have made a diagnosis of perinephritic abscess. The treatment has been blisters, poultices, electricity and “almost everything.”

On examination to-day, we find a girl of large frame, well developed, standing with the right thigh flexed on pelvis at an angle of  $135^{\circ}$ , and walking alone with the greatest possible difficulty (walks only at our urgent request) and moving when it is necessary supported on either side by her father and her sister. Her pulse is 140 and temperature  $101\frac{1}{2}^{\circ}$  (buccal.) Along the crest of the right ilium posterior half, is a well marked fullness, not very tender on pressure, skin not red, semi-elastic but not fluctuating. This fullness extends up into the ilio-costal space, is without appreciable dulness in this space and no tumefaction in the iliac fossa. There is no tenderness along spinal column, over any portion of the abdomen, in or around the hip-joint. The nates on right side flattened yet free from infiltration. The inguinal ganglia are not enlarged. The semi-circumference of the body on a level with the area of fullness is one inch greater on the right side. The thigh can be actively and passively flexed, abducted, adducted and rotated to the extreme normal limit without pain. The limbs are equal in size and in length. Pain is complained of only when extension is attempted. The



spinal column is free from angular deformity is normally flexible and is not tender on concussion.

A diagnosis of perinephritis is made unreservedly and the treatment as in the two foregoing cases adopted. Yet by the 24th of August the relief afforded was not such as to justify a continuance of the treatment. The tumor was the same in size and the deformity of the thigh was the same as when she was admitted. The temperature chart for one week exhibited a variation between  $98\frac{1}{2}^{\circ}$  for the morning, and  $101\frac{3}{4}^{\circ}$  for the evening.

August 25th.—A fly blister is applied over the lumbar tumor this evening, and the vesicated surface is to be dressed in the morning with flaxseed poultices.

September 1st.—The improvement since date of last note is most marked. She walks now nearly erect, and without any pain. The tumor is about one-half its former size.

September 5th.—Limb can be completely extended without pain. The vesicated surface has nearly healed and the improvement continues.

September 10th.—Another blister is applied over the tumor this evening, in the hope of causing its complete disappearance.

September 26th.—As she walks it requires the eye of an expert to detect the side on which the disease existed; in fact there is no appreciable limp. A careful examination shows no fullness in the ilio-costal space, no tenderness on superficial or deep pressure, movements of thigh perfect in kind and degree, no deviation of spinal column, thighs equal in size and length. The general health is excellent. Discharged cured.

October 14th.—Called by request, and carefully examined with absolutely negative results.

CASE XXVI. *Profuse suppuration with great constitutional disturbance; complete recovery at the end of ten weeks.* Maggie H., aged nine, was admitted to hospital July 21, 1879, the same date on which the previous case was admitted. The family history is unimportant. Very healthy during infancy, rubeola being the only one of the exanthemata she has ever had. Two days ago she was brought to the out-door department, and the following history and observations were recorded:

She was well up to four weeks ago, was then taken sick with

chill and fever, and was confined to bed, being treated by the physician in attendance for typhoid fever (parent's report). She had pain in right side and over abdomen, was constipated and had some vomiting. Since the first week she has had great difficulty in walking, has had pain in the hip and down the thigh, has been very restless nights and has become quite weak and cachectic. She hobbles into the office leaning heavily on the mother's arm; stands only when supported, resting most of her weight on the left limb, while the right is raised and everted, the toes only touching the floor. The left lateral decubitus she finds the most comfortable and when thus lying the right thigh can be easily flexed to the extreme normal limit and also rotated perfectly, but extension beyond  $135^{\circ}$  is resisted by muscular action, and the child screams aloud. On getting up she uses both limbs well in flexion and bears her weight on the knees without pain. There is no swelling or tenderness about the hip or trochanter, but in the ilio-costal space, right side, there is a decided fullness extending over to the spinous processes. There is dulness here on percussion as compared with the opposite side, and tenderness is quite marked. The examination is not extended any farther, but the diagnosis is made of perinephritis without any reserve. On her admission the condition is unchanged.

A cathartic is ordered, a tonic of iron and chlorate of potassa and warm fomentations to the lumbar region. The treatment is to be essentially expectant.

July 22d, p. m.—Pulse 130, respiration 28, temperature  $102\frac{1}{2}^{\circ}$ .

July 23d, a. m.—Pulse 115, respiration 35, temperature  $101\frac{1}{2}^{\circ}$ ; p. m., pulse 120, respiration 30, temperature  $103\frac{1}{2}^{\circ}$ .

July 29th.—The fullness has increased and the thigh is now adducted as well as flexed.

Aug. 8.—Has complained recently of pain in head and left side of neck, and there is tenderness over the trapezius muscle. This may be due, in the absence of any other cause found, to her constrained position in standing or walking, which is certainly very peculiar. It is as follows: body inclined forward to an angle with the pelvis of about  $135^{\circ}$ , head carried backward and

to the left, right thigh advanced and hand resting on the knee. Her face in every feature indicates pain.

August 10th, a. m., pulse 124, resp. 36, temp.  $101\frac{1}{4}^{\circ}$ ; p. m., pulse 128, resp. 36, temp.  $103^{\circ}$ . She does not complain of pain but rests so poorly nights that a twenty grain dose of bromide of potassium is ordered at bed-time. The record of vital signs shows the highest range of temperature  $104^{\circ}$  on the morning of the 14th, when the infiltration extends over into the left ilio-costal space, upward to the eighth rib and downward to within one inch of the natal fold. There is marked fluctuation and the skin is glossy and discolored in spots. An incision is made about three inches to the right of the spine and just below the last rib, the pus, very offensive in odor, spurting forth in a thick stream. About one pint is evacuated and poultices are applied. Brandy of course is freely administered. Her temperature falls this evening to  $102\frac{1}{2}^{\circ}$ .

August 15th, a. m.—Pulse 100, resp. 30, temp.  $98\frac{1}{2}^{\circ}$ . She is induced to lie on the right side and a tent is inserted; p. m., pulse 120, resp. 25, temp.  $98\frac{1}{2}^{\circ}$ . The discharge is abundant. She can extend the limb over a much greater arc and her condition is greatly improved.

August 19th.—Leaves her bed to-day. The sac is pretty well emptied. She stands almost straight, the stiffness of the neck has disappeared, is gaining flesh daily.

August 26th.—Stands and walks erect. The wound has closed.

September 5th.—All treatment is discontinued; she walks and runs with ease and is growing quite fleshy. The cure is about complete.

September 16th.—Discharged this date cured. The child is carefully examined and the only sign of pre-existing disease is the incision cicatrix in the right loin. There is no lameness whatever.

October 8th.—Called by request to-day and undergoes a thorough examination with negative results.

CASE XXVII. *A chronic form probably by extension from a nephritis(?) Nearly two years before tumor presented; under observation as an out-patient six weeks immediately preceding*

*the presentation of the tumor; during this period diagnosis made, first of lateral curvature and high shoe ordered, then of caries of the spine and brace ordered; abscess opened one month later; did not close until three and a half months afterwards; cure complete and final examination four months after this.*

Katie H., aged nine years, was brought to the out-door department June 13, 1879 and was seen by a member of our staff who is exceedingly careful in his observations. He learned from the mother that the child had been walking stiffly for about a week only and during that time had lost flesh and strength. He found a half-inch shortening of the right limb with tilting of the pelvis to that side, a dorso-lumbar curve with convexity to the left, a correction of this curve by placing under the right foot as the child stands a book three fourths of an inch in thickness, and free movements at both hip-joints. He made a diagnosis of lateral curvature (followed by a mark of interrogation) due to shortening of the limb. He ordered a high shoe and a tonic. On July 18th I examined the case quite superficially, recognized the obliquity of the pelvis, also a stiffening of the spinal column, observed more distinctly as the child stooped, and made a diagnosis of caries of the lumbar vertebræ, ordering a spinal brace to be applied on the 25th inst.

July 28th.—The patient did not come on the 25th but comes this morning and there is observed a fulness in the right ilio-costal space extending up to the lower border of the ribs and to the left, overlapping the spinous processes. This is more distinct as the child stands. The rectal temperature is  $100\frac{1}{4}^{\circ}$ . The spinal brace is not applied but a diagnosis of perinephritis is now made and in-door treatment advised.

The patient is admitted July 30, 1879, and in the history, more carefully obtained this morning, it is found that she comes of a family tuberculous and scrofulous and has been living for a long while in the basement of a tenement house. It is learned that two years ago (a short time before this she had a mild rubeola) she began to have pain in the back, had headache, had œdema of the eyelids mornings, her urine was scanty and high colored. The symptoms were not severe but lasted for about six months; then she seemed as well as she had ever been, with the

exception of an occasional pain in the right side, until the beginning of June, when lameness and the symptoms described under date of June 13th manifested themselves.

It is additionally noted that during the past summer she has had occasional attacks of vomiting and that the bowels have been regular. There is no fall or other injury in the history.

There is found marked dulness over the region of fulness and possibly deep fluctuation, and the semi-circumference of the body here is 12 inches, against  $10\frac{1}{2}$  inches for the left side. There is no anchylosis or disease to be detected in the spinal column, and pressing the *alae* of the pelvis in the direction of each other gives no pain at sacro-iliac synchondroses or down the thighs. The only sign of any importance about the hips is a limitation of the extension of right thigh. The physical signs of thorax negative; pulse, 125, temp.,  $100^{\circ}$ . The urine is not examined. Tonics are ordered, and the treatment otherwise to be expectant.

August 26th.—The record of vital signs shows no evening temperature above  $101\frac{1}{4}^{\circ}$ . For a few nights recently has had much pain. The skin over the tumor is tense and red.

August 27th. Abscess opened by incision, and only about two ounces of pus evacuated.

September 8th.—The wound is still discharging, though scantily, and the fulness has not materially diminished. Her general condition is good, and she walks with very little deformity.

September 25th.—There is some infiltration yet about the opening, which has assumed the character of a fistulous opening, though the track is not explored.

During the latter part of this month, and the early part of October, there was nocturnal enuresis, which was relieved by belladonna. A little oozing continued from the opening, even after all fulness and deformity had disappeared, and we watched closely for the exfoliation of any bone, but found none.

December 12th.—The opening has just closed. It did not open again, and the patient was discharged cured on January 16, 1880, when it was recorded that she stands naturally, and walks without the trace of a limp; that there is no deviation of the spinal column to right or left; no tenderness along spine, over crest or in ilio-costal space; that the spine is normally flexible,

antero-posteriorly as well as laterally; that the mobility at hip-joints is perfect; that the limbs are equal in size and length; and that the only sign of former disease is the cicatrix in the loin.

On the 24th of April, 1880, Dr. Swasey was kind enough to look the case up for me, made a thorough examination, and found the cure well established. He secured a specimen of urine, which I examined microscopically, finding nothing pathological.

CASE XXVIII. *Spontaneous recovery after the appearance of the tumor.* Jane G., æt. 4½, was admitted to the hospital January 6, 1880, much emaciated, totally unable to walk, left thigh flexed on pelvis at an angle of 135°, easily flexed to the normal extent, easily rotated, yet not extensible beyond the angle just named. The hip-joint was absolutely free, but there was fulness and tumefaction in the left ilio-costal space, extending down into the groin, with dulness over a large area, and excessive tenderness. There was marked elevation of temperature, but this was not measured. The child came from the worst part of the city, although the family history was good. The present disease began five weeks ago with slight lameness. This was attributed to a fall. Fever soon developed, the sleep was disturbed, the lameness increased, and for the past seventeen days the child has been unable to walk at all. There has been much constitutional disturbance, and pain has been referred to the spine, the loin and the thigh.

The mother removed the child the same day, and was referred to my friend Dr. W. T. Bull, one of our consulting surgeons, who kindly admitted it to Chamber Street Hospital about three weeks later, had it put to bed, where it remained two or three days, pending a thorough examination. When this was made, Dr. Bull informed me, February 18th, there was no fulness found, no lameness, no sign of disease. A complete recovery had taken place spontaneously.

The foregoing clinical record pictures, I trust, with sufficient clearness the symptoms and course of this affection. I have little to add on this point to my former contributions to the literature of this subject. A larger experience but enables me to repeat a paragraph in my first paper—viz.:

“*Symptomatology.*—In typical cases the disease generally be-



gins with a rigor or two, febrile exacerbations more or less severe according to the acuteness of the attack, lancinating pains in lumbar region, loss of appetite and general indisposition. In fact the invasion does not differ materially from that of other acute inflammatory lesions, unless perhaps, the pain be more localized, and if the child be very young the locality of the pain is not discovered. Constipation, I believe, is always present. Very soon we have preternatural immobility of the spine, a stooping forward with elevation of the shoulders. After a week or ten days, spasm of psoas muscle occurs, and the gait becomes characteristic of that so commonly regarded as the second stage of hip-joint disease. The urine is of high specific gravity, and is loaded with urates. The tumefaction appears and the pain becomes excruciating. If an exit be given to the pus a speedy recovery follows; if this be delayed and the contents of the sac be really pus, it burrows along the cellular tissue, producing an immense abscess, a spontaneous opening is effected and the convalescence is protracted. If on the other hand, the inflammatory process has not resulted in suppuration, the contents are most likely serum, and resolution is effected."

The disease in twenty-seven of twenty-eight cases I have now placed on record ran its course in an average period of about three and one-half months. The analysis gives: two cases terminating in one month, three in six weeks, eight in two months, six in three months, two in four months, three in five months, two in six months, one in one year, while one (No. xxvii) seemed to extend over a period of two and one half-years.

In *sixteen* there was suppuration more or less extensive, while in *twelve* there was no suppuration at all. We see, then, that nearly one-half the entire number underwent resolution.

As to the constitutional disturbance produced, in thirteen cases this was very great, and at times very alarming, in eight it was moderate only, and in six was very slight. The complications were few. In one there was an alarming hæmorrhage, easily controlled, however; in one there was a cellulitis of the thigh or rather a periarthrititis of the knee; \* one had a femoral abscess,

\* See sequel of this case in a paper on "PERIARTHRITIS," by the author of this paper in the N. Y. Medical Journal, May, 1880, case xx.

one a sub-scapular abscess, one a nephritis and one a pyelitis. In several there was incontinence of urine and at times painful micturition; yet these are rather symptoms than complications.

In nineteen I could find no exciting cause. In eight the cause was a contusion, a strain or a fall, while in one a nephritis seemed to be the starting point. I fancy that perinephritic inflammation is induced as is inflammation in most other localities, viz: by excesses of heat and cold.

The ages of the patients vary between one and one-half years and fifteen. Five were under three years of age, twelve between three and six years, eight between six and ten, and three between ten and fifteen.

The sexes were about equally represented, i. e., there were thirteen males and fifteen females.

The lesion was on the right side in fourteen cases, and on the left in fourteen—equally distributed. Among the females the right side was the one affected in six cases, the left in seven. Among the males eight for the right side and seven for the left.

The treatment employed in the twenty-eight cases has varied a little, yet it has chiefly been expectant. No specifics have been discovered, and I am fully convinced that *in the management* of the cases lay the secret of success.

One ran its entire course without medical or surgical aid, and the result is one that any medical man would be proud to get! Four were treated on the purely expectant plan—no surgical interference, nothing to promote resolution. The general condition of the patient was regarded as the one essential feature demanding attention. Two of these terminated in resolution; two in suppuration, all making perfect recoveries.

The hot water douche was employed in five cases and two of these went on to suppuration despite the douche, while three made a speedy recovery, terminating by resolution. Hot fomentations were used in four instances with good results in two, i. e. two got well without suppuration, and the other two got well after abscess. In five cases blistering and subsequent poulticing constituted the treatment, with four recoveries without any suppuration.

As regards the time at which the incision was made, an early incision was made in three, a late one in eleven, while in two

cases the abscess opened spontaneously. In one instance only, Case XIX, was there any delay in recovery and any annoying complication. In all probability if the abscess had been opened early there would have been no complication.

Twelve cases terminated in resolution and sixteen in suppuration. All, with a single exception, made perfect recoveries. That exception was in Case I, reported in my first paper on this subject. Since the publication of that paper I have found that this girl walks a little lame. The mother states that this came on subsequent to her discharge. I have within the past year examined the parts well and have found no joint lesion whatever, but a loss of power in one of the glutei muscles, due, I am confident to destruction of some of its fibers by the extensive suppuration. Otherwise the result is perfect.

In concluding this paper I wish to insist on a careful examination, several times if need be, a history obtained without bias, an unalterable conviction that hip disease is from the beginning a chronic disease, and a slowly progressing disease; I wish to insist, I say, on these as points absolutely essential in making diagnosis. I dislike to be hypercritical, but I firmly believe that ninety per cent., yea, I am prepared to assert a much larger per cent. than ninety, of the cases of hip disease reported as cured without lameness or deformity, cured completely, are not and never have been cases of hip disease. I speak advisedly on this subject, and I shall claim the privilege of publishing from time to time such cases as may be and are readily mistaken for hip disease; cases of perinephritis, of perityphlitis, of peri-arthritis, of primary traumatic periostitis, of the various neuroses of the hip, of sub-acute rheumatism about the hip and of acute primary synovitis of the hip, all of which affections are insignificant as compared with that terrible malady, with the advanced stages of which we are all so painfully familiar despite the great improvements in orthopædic surgery.

I cannot close this article without acknowledging valuable assistance from Dr. John J. Berry, of our hospital staff, in making out the foregoing analysis.

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## ARTICLE II.

DISEASED MEATS AND FOUL WATER CONSIDERED AS CAUSES OF DISEASE. By HENRY M. LYMAN, M.D., Professor of Physiology, Etc., Rush Medical College, Chicago.

In view of the peremptory manner in which our newspaper oracles assign to this or to that article of food and drink the cause of the most varied diseases, it seems desirable to ask whether any exact knowledge may exist regarding the relations between our aliments and the maladies which afflict the community. Scarlet fever, diphtheria, malarial fevers, etc., etc., have recently been referred to contamination of our water-supply. The sanitary authorities consider "emaciated beef, sour hams, cholera hogs," and various other kinds of game, so dangerous to the public health that they are daily presenting the fertilizer-factories with hundreds of pounds of meat, of which no inconsiderable portion might otherwise find its way to the mouths



of certain classes of our population. How far this course may be necessary and justifiable becomes, therefore, an important question. In his recent work on Epidemic Diseases, Professor Léon Colin has carefully reviewed the whole subject, and has arrived at the conclusions which I shall present in the following abstract of his chapter on Food and Water, considered as causes of disease.

If animal food, says our author, can be considered the cause of epidemic disease, it is through its absence rather than through its quality. The cattle-plague itself does not vitiate the character of beef furnished by cattle dying of the disease. The principal danger to man in such cases lies in the risks of a meat famine caused by the general destruction of the herds. The experience of Chauveau might lead to a belief in the danger of consuming the flesh of animals affected with diseases communicable to the human species, but experience proves the contrary. During the first French Revolution the poor of Saint Germain and of Alfort were preserved from starvation by the use of the flesh of glandered horses which they devoured without any injury whatever. The same thing is true in the case of meat derived from animals affected with anthrax. Flesh which contains the germs of trichina, of echinococcus, and similar parasites, is alone really dangerous as an article of food. It is the class of aliments derived from the vegetable kingdom which is the most likely to prove injurious to the health of man. Scurvy, leprosy, pellagra, ergotism are familiar examples of alimentary diseases. Dysentery and diarrhoea have been charged against the abuse of fruits; but these affections are usually produced by causes which simply coincide, in point of time, with the ripening of fruit. The absence of food, such as occurs in famine, often profoundly modifies nutrition without the production of any of the maladies which are properly associated with defective or vicious alimentation. Under such circumstances, the results appear as an aggravation of the majority of the prevailing diseases, and an increase of the mortality, which rises as the famine becomes intensified. Thus we see typhus fever, relapsing fever, dysentery and similar diseases associated with a deficient alimentation. The intimate relation which exists between the rate of mortality

and the price of provisions has long been remarked. High prices mean scarcity among the poor; and a scanty food supply soon effects an increased predisposition to disease. The results of such varying conditions are fully illustrated on a large scale in the Asiatic empires. In districts where the ancient irrigation works have been restored, so as to furnish abundance of water for the crops, cholera and other wasting diseases cease to prevail; the population rapidly increases, and good health becomes universal. The first care of our sanitary authorities, when they undertake to deal with the food-supply of the people, should be directed toward measures tending to increase its quantity and to decrease its expense. Great caution, therefore, should be exercised in the matter of confiscating and destroying edible meats. Such destruction of a portion of the supply enhances the cost of the remainder and reduces the quantity available for the nourishment of the poor. It is only necessary to stand for a short time in any frequented market, to see how great is the number of unfortunate creatures who are compelled to approach the butcher with the humble inquiry for cheap meat. The world is full of people who would gladly feast upon the refuse which the rich consider hardly fit for a dog. If it can be shown that much of the meat which is now subject to destruction in our market is really harmless as food, its loss is a tremendous waste of capital in the form of human health and vigor.

I am well aware that the attempt has recently been made to show that typhoid fever may be caused by the consumption of tainted meats. A careful analysis, however, shows that the cases quoted as cases of typhoid fever are really cases of intestinal irritation produced by the use of meats in a state of actual putrefaction. This only occurs among those who use compressed meats, old sausages, putrid cheese, etc.; and the cases recorded bear no kind of relation with the use of such articles. They belong to the category of cases of poisoning by the eating of custards—articles of diet which are ordinarily perfectly harmless but which may occasionally be transformed into deadly poisons, probably by the growth of poisonous fungi or algæ in their substance. In the *British Medical Journal* for March 20, 1880, may be found a collection of such cases; but of them all it may

well be remarked, in the language of Colin (p. 147), that such examples are ensphered in a multitude of cases where "similar diet has often been used with an impunity which forbids its enumeration among the causes of typhoid fever."

*Drinking Water.*—A certain class of medical writers are accustomed to accuse the water supply of a community as the vehicle of communication by which the efficient causes of malarial fever, cholera, typhoid fever, etc., etc., are conveyed into the system. This doctrine is, just now, exceedingly fashionable among English authors, who seem ambitious to surpass each other in the display of uncritical credulity. Without denying the communication of parasitic diseases by the injection of water containing the eggs of worms, our author examines the evidence advanced in behalf of the communication of the various epidemic diseases and arrives at the following conclusions:

I. *Intermittent fevers* are caused by respirable malaria. Numerous examples are given in illustration of the fact that people who drink so-called malarious waters, but who do not breathe the atmosphere of the malarious locality, are not attacked with malarial fevers; while, on the contrary, people who, like the Romans, dwell in a malarious atmosphere, but who, at the same time, drink the pure aqueduct water from the healthy Appennines, are scourged with fever. Swamp waters have been considered causative of fever because, in the vast majority of cases, the people who drink them are at the same time breathing the malarious atmosphere which is associated with them. In this connection it is interesting to note that in the recent experiments of Professor Klebs at Rome (*Med. Times and Gazette*, Jan. 17, 1880) the injection of rabbits "with water standing over the marshy ground remained without effect," while infusion of the organic matter in the soil produced grave febrile disturbance.

II. *Typhoid Fever.* English and German authors have collected a number of examples supposed to prove the communication of typhoid fever by drinking water. The story of the Lausen epidemic is perhaps the most extraordinary example of such narratives. It is given in full by Dr. Cayley, in a recent lecture on typhoid fever (*Brit. Med. Journ.*, March 13, 1880).

Ballard and others have attempted to make out a similar method of water contamination as the cause of local epidemics of typhoid fever. But when, as in the Lausen epidemic, it has been shown that the disease had been prevailing less than two miles from the village for nearly two months previous to the greater outbreak, it would seem that all the credulity of an homœopathist was needed in order to adopt the hypothesis that the fever poison was conveyed by filtration through a mountain a mile thick, rather than the more reasonable view that it had found its way over or around the obstacle by the vehicle of personal intercourse. It, however, should not be forgotten that the use of water charged with decomposing organic matter may become one of the predisposing causes, if not an actual exciting cause of typhoid fever. This may especially be observed in localities where fecal accumulations are allowed to filter into adjacent wells. Ordinary excrementitious substances may then help to originate the fever.

III. *Cholera*.—The propagation of cholera by contiguity, its rapid diffusion, and its dispersion without regard to community of water-supply, all seem to negative the idea of its propagation through the medium of drinking water. When cholera was raging in Paris it did not prevail in the towns which took their water from the Seine below the city. The oft quoted examples of local prevalence of the disease among people using a common well or spring, with cessation of the epidemic when the water-supply was changed, may be explained by reference to the well-known brevity of local epidemics. While it may be admitted that water charged with putrefying organic matter may disorder the general health, thus undermining the power of resisting disease, it cannot be considered a direct cause of cholera.

IV. *Dysentery and Diarrhœa*.—These are the maladies in the production of which foul water is most efficacious. Examples without number exhibit the relation between stagnant waters, filled with decaying matter, and these intestinal diseases.

V. As for *scarlet-fever, diphtheria* and all other similar diseases, there is not the slightest evidence that they have any direct connection with the character of the water-supply. Even the attempt to connect the occurrence of ulcerative stomatitis with the use of melting snow as a drink has failed.

That water over-charged with decomposing organic matter is dangerous to health is universally admitted, and we have presented a view of the diseases which it may cause, as well as those which it can influence only in the most remote and indirect manner. It remains to inquire what degree of organic pollution (I have excluded from this essay all consideration of the dangers arising from the use of waters containing an excess of mineral matter) may be tolerated with impunity. The English Commission on River Pollution, proposed the following (*Nature*, Jan. 15, 1874, p. 197) as a standard beyond which organic matter could not be increased without danger: "Any liquid containing, *in solution*, more than two parts by weight of organic carbon, or 0.3 part by weight of organic nitrogen in 100,000 parts by weight." The test furnished by the French Academicians (*Nature*, June 10, 1875, p. 116) is sufficiently simple for popular use. The results of their investigations "seem to prove that water in which animals and plants of higher organizations will thrive is fit to drink; and, on the other hand, water in which only the infusoria and lower cryptograms will grow is unhealthy." Tried by either of these standards our Chicago water supply is still beyond suspicion.

The latest deliverance on this subject is from the pen of Prof. Tidy, who, on the 18th of March, 1880, read before the London Chemical Society, a paper on River-water. His conclusions regarding sewage will be read with interest by our friends along the Illinois river. His reporter says, (*Nature*, March 25, 1880, p. 507): "From inspection of the effect produced by sewage on rivers, from analyses of the river-waters, and from experiment, the author concludes that the oxidation of the organic matter of sewage takes place, when mixed with unpolluted water and allowed a certain flow, with extreme rapidity. The various methods of artificial purification are discussed; of these filtration through sand is preferred. Under the third category the arguments for and against the use of river water for drinking purposes are examined; it is shown that the death-rates of towns supplied by wells and of those supplied by rivers are practically alike, and that in London there is very little to choose, as regards mortality, between districts supplied with well-water and those supplied by

river-water; and while admitting that, as a matter of sentiment, he would prefer well-water, the author contends that there is no reason for supposing that the *materies morbi*, whether it exists as a germ or not, can resist oxidation, which is efficient in destroying other organic matter, as proved by chemical analysis. The author finally submits the two following conclusions: 1. That when sewage is discharged into running water, provided the dilution with pure water be sufficient, the whole of it, after the run of a few miles, will be efficiently got rid of. 2. That facts indicate that whatever may be the actual cause of certain diseases, the *materies morbi* which finds its way into the river is destroyed along with the organic impurity."

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### ARTICLE III.

CASES OF TRACHEOTOMY FOR CROUP AND DIPHTHERIA. By E. FLETCHER INGALS, A.M., M.D., Lecturer on Physical Diagnosis and Diseases of the Chest and on Laryngology in Post Graduate Course, Rush Medical College.

CASE I. About the middle of March, 1880, I was called by Dr. David Dodge to operate on — Miles, a boy about six years of age, suffering from diphtheritic croup.

We found the child breathing laboriously and much exhausted, but not markedly cyanotic. Assisted by Drs. Dodge, Mulfinger and Waters, I operated at once.

Shortly after the introduction of the tube the child ceased breathing and was apparently dead, but the heart was found to be still beating, and the tube was clear. Artificial respiration and vigorous rubbing of the limbs, kept up for about twenty minutes, had the happy effect of restoring the patient. Subsequently the child did well. Lime water was kept boiling in the room and an atomizer was kept in use part of the time, throwing a spray of carbolic acid. The patient was kept on tonics, quinia and iron, and made a good recovery.

The tube was removed on the twelfth or thirteenth day (I am not quite certain which).



CASE II. — Freer, æt. about two years, true croup. April 6, 1880. I saw the patient first about 9 a. m. on this date and found him breathing laboriously and partially cyanotic. I at once told the mother that an operation offered the only chance for saving her child. She wished it performed and I hastened for my instruments.

I returned about ten o'clock with Dr. D. W. Graham, who had kindly consented to assist me, and, finding the child unconscious and extremely cyanotic, we made preparations for the operation with the greatest despatch. When the child was placed on the table it manifested no sensation on touching the eyeball, therefore no anæsthetic was used. The operation was completed without difficulty, but, as I had at hand no tube of proper size, silk threads were passed through the trachea near the edges of the opening on each side and fastened with an elastic behind the neck. Two students, Messrs. T. E. Webb and L. W. Pontius, volunteered to stay with the patient and give all necessary care. The patient rallied and seemed very bright that evening, but early the next morning Mr. Pontius telephoned to me that the child was rapidly sinking. I hastened to the house and found the patient, as he had stated, in a precarious condition. The tissues about the wound were dry and the opening into the trachea partially contracted and the trachea itself partially filled with inspissated mucus.

I made a solution of bi-carbonate of soda, a teaspoonful to a pint of water, of which I directed a spray with the steam atomizer on the tracheal opening for about half an hour, by which time the mucus was softened, so that we removed it and, upon inserting a tube, the child again breathed easily and rapidly improved. In the evening the child continued better than early in the morning, but it showed some symptoms of filling of the bronchial tube with the croupy exudation.

Mr. P. remained with the child until one o'clock of that night, when it died from the gradually increasing obstruction below the trachea, thirty-nine hours after the operation. This patient had been hoarse for two or three days but had no alarming symptoms until the night previous to the operation. The mother had treated these as she had been accustomed to treat croup, by free

use of substances which caused vomiting. After the operation the child was given fluid diet, which it took sparingly, and whisky, which was administered freely.

CASE III. True Croup. April 11, 1880. L. Gingsburg, æt. six, had been sick about two days.

This case was very similar to the above. I was called by telephone at midnight to see "a child dying in croup," therefore I took my instruments with me. I found the child cyanotic, restless, breathing laboriously and nearly unconscious.

An operation was advised and consented to. I sent for Dr. Bartlett, who lived only a block distant, and, as soon as lamps could be procured, we made the operation. When the child was placed on the table she was nearly insensible but a small amount of chloroform was administered to keep her quiet.

The operation was made as the preceding and ligatures were passed for convenience through the cut edges of the trachea. This case progressed almost exactly as the preceding, and death occurred in forty hours, from a similar cause. The treatment was the same as in the preceding, with the addition of the internal use of benzoate of soda. Mr. Pontius, who watched the preceding case for me, stood faithfully by the little patient to the last, and to his careful and assiduous attendance are to be attributed the last twenty hours of the patient's life.

The first of these cases was diagnosticated diphtheritic croup. It was operated on comparatively early and recovery occurred.

The two latter were undoubtedly cases of true croup; they were operated on after they were moribund and their lives were prolonged about forty hours, to the great comfort of parents and friends, and death finally came quietly, without a struggle.

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## Clinical Reports.

### NOTES FROM PRIVATE PRACTICE.

#### ARTICLE IV:

#### *A Severe Case of Puerperal Eclampsia at the Eighth Month of Pregnancy, with Recovery.*

I was called professionally, at one o'clock, on the morning of the 20th of January last, to visit Mrs. H.

On my arrival, I found her in a perfectly unconscious condition, having severe convulsions every few minutes, accompanied with frightful facial contortions; frothy mucus mixed with blood issued from the mouth; the pupils were dilated; the skin cool; pulse one hundred and sixty and feeble; and respiration stertorous and frequent. Her temperature was not noted. She was unable to swallow. From Mrs. C., at whose house Mrs. H. was residing temporarily, I obtained the following history of the case:

The patient is eighteen years of age; married, and within a month of expected confinement, primipara; has enjoyed good health to present illness; was taken sick during the preceding afternoon, and vomited several times; when, toward evening, slight labor pains ensued but irregularly. This continued to be the condition of Mrs. H. until about twelve o'clock, midnight, when she was seized with convulsions.

On examination per vaginam, I found a vertex presentation; os uteri dilated about two and a half centimeters in extent and patulous; and the pelvis of normal amplitude. Digital dilatation of the os was readily effected, and without much delay the membranes were ruptured and liquor amnii discharged. It now became apparent that the convulsions had entirely suspended

uterine action, and, of course, no further advancement toward delivery could be expected under the circumstances, from the natural efforts of the patient. The extreme gravity of the case brooked no delay, and immediate delivery, became a *sine quâ non*.

Not having come prepared to encounter just such a case, some little time was consumed in sending for obstetrical instruments. Without any unnecessary delay, however, the forceps were applied, and the patient was readily delivered, at two o'clock a. m., of a dead female child, weighing eight pounds. The child had been dead, apparently, several hours.

The convulsions ceased, immediately after delivery, and did not return; respiration, gradually, became regular and free, and, indeed, all bad symptoms were at once ameliorated. After waiting an hour at the bedside, I administered an anodyne to control restlessness which began to manifest itself, and left the patient for the night. Her restoration to consciousness did not occur until seven o'clock in the morning, an interregnum of nearly eight hours. She made a speedy recovery, without the development of any untoward symptoms. The urine was not tested, but was no doubt highly albuminous, as is almost universally the case in this disease.

The notable points in this case, worthy of observation, are the extreme severity of the disease, the profound coma almost extinguishing life from the first, the sudden cessation of the convulsions after delivery, and the rapid recovery of the patient.

The usual treatment, restored to in puerperal eclampsia for the purpose of subduing the convulsions, viz., venesection, chloroform inhalation, chloral hydrate, etc., was not employed; and, I opine, would not have proved of much avail, as the vital powers were too much exhausted; besides, this would have consumed valuable time.

The conclusions of that eminent British obstetrician, Dr. Robert Barnes, in my opinion, establish the correct rule of procedure, in these cases, viz., That after the sixth month of pregnancy, the first, and indeed the most important measure, is to relieve the uterus of its burden, and this too at the earliest possible moment.

I am confident in considering the critical condition of the patient, when first seen, that nothing but delivery could have arrested the convulsions, and have prevented a fatal termination of the case.

E. DAY, M.D.

GRAND TOWER, ILLINOIS.

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TREATMENT OF PROLAPSUS OF THE RECTUM BY HYPODERMIC INJECTIONS OF ERGOTINE.—M. Vidal. (*Bulletin de l'Acad. de Méd.*, Feb. 3, 1880, P. 110.)

According to the author, prolapsus of the rectum may be readily cured, and in a comparatively short time, by hypodermic injections of ergotine. By this new method Vidal has succeeded in curing three adult cases, of which he gives the details. He used (gr. xv) one gram of Bonjean's extract of ergot or ergotine in (3 jss) five grams of cherry laurel water. Each injection consisted of 15 to 20 drops (exceptionally 25), which is equivalent to 20 to 25 centigrams of ergotine; or, in other words, to the extract of a gram and a half to three grams of ergot. None of the injections were followed by inflammation or abscess. Bonjean's ergotine causes a rather sharp, burning pain; the solution of iron is much better tolerated. In the future the author will give preference to the latter.

A CURIOUS ACOUSTIC ILLUSION. (*Telegraphic Journal*, London, September 15, 1879.) This illusion, pointed out by M. Plumaudon, of the Puy de Dôme Observatory, has also been observed by others who have made use of a pair of telephones in receiving messages or in experimental research. With a single telephone held, say, to the right ear, the transmitted voice seems to come from a distance to the right; while with a telephone held to the left ear it seems to arrive from the left of the listener. With a telephone to each ear, if one ear be less sensitive than the other, or if the telephone be held farther from that ear, the voice apparently shifts to the side of the other ear; and if both ears hear alike and both instruments are equally near their respective ears, the voice apparently proceeds from in front of the observer.

## Society Reports.

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### ARTICLE V.

ILLINOIS STATE MEDICAL SOCIETY. Annual Meeting at Belleville, Ill., May 18, 19 and 20, 1880.

#### FIRST DAY. MORNING SESSION.

In the temporary absence of the President, the First Vice President, Dr. G. W. Jones, of Danville, occupied the chair. Prayer was offered by Rev. Mr. Van Treese. An address of welcome in behalf of the local Committee of Arrangements was made by Dr. W. West, Chairman.

The address of welcome on behalf of the citizens, by Judge Snyder, was postponed to the evening. Various matters of routine business were attended to, when the President, Dr. E. Ingals, of Chicago, arrived and occupied the chair. A letter of resignation of the office of Permanent Secretary was received from Dr. N. S. Davis. Dr. Davis gave as a reason for his resignation ill health, and expressed regret at being obliged to take this step after a service of thirty years.

His resignation was accepted and a committee appointed to prepare resolutions that should properly express the sentiments and regrets of the Society at this step.

#### AFTERNOON SESSION.

Dr. E. Ingals read his address as President. It dealt chiefly with the hygiene of cities, and was especially applicable to Chicago.

First were considered the duties of the government and of the profession in sanitary matters. He assumed that much



of the disease we suffer might be avoided by drinking pure water and breathing pure air, and this led to a consideration of the sewerage of Chicago and its water supply. He advocated the enlarging of the canal to the capacity of a river; the use of large quantities of water in our houses and sewers; the ventilation of sewers in the streets, and of house-drains by pipes reaching above the house, and of the house itself by heating with open grate fires, being careful that the air supply is pure, and especially that it be not drawn from beneath the house. Also, that government supervise the sewerage, plumbing and air supply of buildings—private as well as public. He claimed there was no water superior to that of the Northern Lakes, and predicted that Illinois would become populous and wealthy enough to supply this to its interior cities for domestic use. He advocated, so far as possible, the isolation of the sick from the well, and official surveillance of highly infectious and dangerous diseases, as small-pox, scarlet fever, yellow fever and Asiatic cholera; the use of disinfectants and the placing of warning cards. Also, that government should prevent ignorant people and charlatans from practicing the healing art, and prescribe the attainment necessary to enable any person to receive the degree of Doctor of Medicine. He advised that authors of papers presented to the Society be allowed to contribute them to medical journals either before or after their publication in the transactions.

Dr. Crummer, of Warren, then read the main report on

*Practice of Medicine.*—It embodied a discussion of diphtheria, with an account of an epidemic of this disease during the past fall and winter.

He discussed the evidence bearing on the contagiousness of diphtheria, and added to this evidence in the affirmative from his experience. Diphtheria was brought into one small community (having fifty-nine school children) by two boys who had visited a neighborhood at some distance where diphtheria was prevalent. In a few weeks the disease spread to fifty-eight people, with a mortality of thirty per cent.

He advocated the prompt isolation of all people sick with diphtheria. It was criminal almost to allow the uninfected children

to remain in the same house with the infected. In one case he had had constructed a wood shanty in which to isolate the well children of a family where a case of diphtheria had occurred.

In the epidemic which he reported, two cases out of seventeen cases of severe nasal involvement had recovered.

His local treatment of the throat consisted in, among other things, the application of solutions of tannic acid. For the nasal cavities when they were involved he used a four per cent. solution of carbolic acid, or a solution of salicylic acid of the same strength, injected freely into the nose.

He spoke next of an epidemic of

*Pneumonia* which had visited Northern Illinois during the past winter. It had been quite widespread—the number of cases being greater than for years previously—but the mortality was low.

An extensive correspondence with many members of the profession in relation to this disease had shown that the practice as to the use of blisters and *veratrum viride* was very variable. There was quite a unanimity in the use of considerable doses of alcoholic stimulants for all cases that assumed a form of great depression.

Dr. F. B. Haller, of Vandalia, read a supplemental report on Practical Medicine, which consisted in an account of an epidemic of

*Mumps* which had occurred in his neighborhood during the past winter season. Nothing so widespread had ever occurred in his experience. Whole communities were attacked with this disease. Schools were, for a time, suspended for want of pupils. The cases were of all varieties in severity, but the proportion of severe cases was large. Metastasis was common. It occurred most in males, especially boys. A few cases occurred among grown women, in which the parts involved were generally the mammary glands, very rarely the ovaries. Girls escaped these complications. In a few cases inflammation of the meninges of the brain took place as a complication, and in some the symptoms were quite alarming. The temperature was as high as 105° F., the tongue dry; delirium was present and a typhoid state, yet no deaths resulted.

The complicating inflammation of the testicles was found most in the severer cases of parotitis.

The epidemic had witnessed no fatal cases, and no cases of damage of testicle had so far been noted among the victims of this visitation.

The treatment was expectant and palliative, poultices and Dover's powder forming a large part of it.

Dr. Bird, of Quincy, in discussing Dr. Crummer's report on diphtheria, advocated the Billington treatment, and had not thought isolation much of a necessity.

Dr. Hollister hoped for a better study and more evidence as to the bacterial character of the poison of diphtheria. He advocated the application to the diphtheritic patches of the liquid sub-sulphate of iron.

Dr. C. T. Parkes advocated the combination of a vigorous tonic treatment with a vigorous local one. For the latter purpose he would use the liquor ferri persulphates and glycerine in equal parts for application to the throat, and for the nose, when involved, solutions of boracic acid, to be freely used by injection.

Dr. W. Hill, of Bloomington, read the chief report on

*Surgery.*—He discussed the whole range of the recent important improvements in modern surgery, but paid special attention to antiseptic surgery, extirpation of floating kidney, extirpation of cancers of the rectum and treatment of rodent ulcer.

He recommended thymol as being equal to carbolic acid for the spray in the Lister treatment.

He quoted several records of cases of extirpation of the rectum. The operation seemed to be a feasible one. He had witnessed one operation of this kind in Cook County Hospital by Dr. Isham.

He advocated the treatment of rodent ulcer by the scraping-out process, and related three cases of successful operation by this method, the disease not having returned in either case. He did the scraping with the handle of a scalpel, and made it very thorough. Every particle of diseased tissue, down to perfectly healthy structure, was to be removed in this way.

He read a supplemental report by Dr. A. C. Rankin on

*Conservative Surgery*, in which were detailed some cases of

very severe crushing injuries of the extremities, which recovered with useful limbs under conservative management.

Dr. J. G. Harvey read a report of two cases, one of extirpation of the parotid gland, the other an unusual case of hernia in an old woman.

In the latter case there was a band of fibrous tissue constricting the knuckle of gut inside the abdominal wall, making a strangulation that was not relieved by reduction of the hernia within the sac.

Dr. Bird, in discussing these reports, advised the attempt, in extirpating tumors of the rectum, to save the sphincter ani muscle. He had once done this successfully. He used the electrocautery instead of the knife.

Dr. C. T. Parkes gave his experience and observation, in Cook County Hospital and elsewhere, with thymol in the antiseptic spray. It was not as valuable as carbolic acid. By Callander's method of dressing without spray, but using a two and one-half per cent. watery solution for freely washing wounds and wounded surfaces, or an eight per cent. solution in oil for the same purpose, the results were as good as by the Lister process with thymol.

Rectotomy was a very hazardous operation, the mortality of which was so large that it ought never to be done except for a very small epithelioma. Whenever the carcinomatous infiltration involved two or more inches of the intestine and encircled the canal it was useless to operate, if the teachings of experience were of any value. He had witnessed five operations, with four deaths; in three of these the peritoneal cavity had been opened. This accident was likely to happen whenever, during the operation, the tumor was drawn forcibly downward. This latter maneuver ought never to be made, nor should stitches be inserted into the cut end of the gut.

Dr. Hill spoke of his method of treating strangulated hernia. It was by carrying his finger or thumb up into the ring, forcing the skin before it, and dilating the ring by pressure upward until reduction without a cutting operation was possible.

Since he had used this method he thought he had operated on

one hundred and fifty cases with success, and without encountering a case which this procedure would not relieve.

SECOND DAY. MORNING SESSION.

Dr. G. W. Nesbitt, of Sycamore, as Chairman of the Committee on Obstetrics, read his report. His effort was chiefly devoted to a consideration of the necessity that beginners in the practice of medicine have practical instruction in obstetrics. He thought this was the direction in which medical colleges could best improve their systems of instruction. In no department were young graduates so defective as in this. He advocated lying-in-hospitals in connection with medical colleges, and said that on the so-called cottage plan the expense need not be great.

Dr. W. T. Montgomery, Chairman of the Committee on Ophthalmology and Otology, read an interesting paper on

*Suppurative Inflammation of the Middle Ear.*—This paper was a discussion of the subject in general, without any attempt to offer anything not found in the literature of the subject. The importance of a more full understanding of the importance and dangers of these affections by general practitioners was specially emphasized. He also reported a case of

*Double Optic Neuritis* from a violent fit of anger. The patient was a full-blooded, robust man, with a family history of insanity, and was subjected to more than usual excitement for a week previous to failure of vision, and the day previous he had a violent fit of anger. The ophthalmoscope showed the papillæ intensely engorged. Treatment: Free local blood-letting and large doses of chloral hydrate and potass. bromide. In three weeks from the time of beginning of failure of sight the neuritis had entirely disappeared. Vision, which when patient was first examined was right eye, fingers at ten feet, left eye  $\frac{15}{100}$ , had returned to normal condition, and so continues.

Dr. S. J. Jones made remarks commendatory of the report, insisting on the importance of a better understanding of these chronic ear troubles by practitioners.

Dr. F. H. Davis presented a volunteer paper on

*Inhalations*, in their application to diseases of the deeper pulmonary structures. Since reading a paper on the same subject,

several months ago, before the Chicago Medical Society, he had made many new observations, and had added to the means of administering inhalations.

#### AFTERNOON SESSION.

The Committee on Nominations reported, recommending the following as officers for the ensuing year:

President—Dr. G. W. Jones, of Danville.

First Vice President—Dr. W. Hill, of Bloomington.

Second Vice President—Dr. G. W. Nesbitt, of Sycamore.

Treasurer—Dr. J. H. Hollister, of Chicago.

Assistant Secretary—Dr. W. T. Montgomery.

Committee of Arrangements for next meeting—Drs. J. Nevins Hyde, Norman Bridge, F. H. Davis, Roswell Park and E. F. Ingals. They recommended Chicago as the next place of meeting.

The report of the committee was accepted and adopted.

The Judicial Council reported through their Chairman, Dr. F. B. Hullar, recommending the expulsion from the Society of Dr. L. R. Williams, alias Lucas. The report was adopted unanimously.

Dr. Lucinda H. Corr, of Carlinville, from the Committee on Gynæcology, read an interesting paper on

*The Relative Value of Symptoms of Neurasthenia, as such, and the Remote Symptoms of Uterine Disease.*—She argued that while symptoms of neurasthenia might be due to general causes, uterine disease was capable of producing them, and frequently they were so produced. Neurasthenia in women was usually caused by uterine disease.

When symptoms of uterine disease and symptoms of neurasthenia were found in the same patient, it was generally true that the former had occurred first. There were three modes of treatment in vogue for such cases. The first was travel, hygiene, general tonics, etc. The next was local treatment of the uterine disorder. Of these two the latter was the best, as shown by results. The best treatment was a judicious combination of the two already mentioned.



Dr. Jewell remarked that the position assumed in the paper was correct.

Dr. J. H. Rauch next occupied the attention of the Society in a detailed statement of the doings of the State Board of Health since its organization. He also discussed the value, relations and means of execution of the Medical Practice act, and that for the gathering of vital statistics.

Dr. J. J. R. Patrick, of Belleville, read an essay on

*Medical Specialties*, but more especially the specialty of dental surgery in its intimate relation to the general practice of medicine.

*First.* Specialties necessary to human progress as it is impossible for one mind to acquire an accurate knowledge of the whole domain of medicine.

*Second.* The impossibility of drawing a line of demarcation between the different specialties and the general practice of medicine.

*Third.* The great abuse in constant practice by so-called dentists in using anæsthetics as an auxiliary in the extraction of teeth, in order to replace them with others less expensive.

*Fourth.* The many diseases of the mouth, which are constantly under the eye of the intelligent dentist, render him, if properly qualified, the proper person to treat such diseases, owing to his constant manipulation in that region.

*Fifth.* Showing that the mouth, being the vestibule of the alimentary canal, should receive more attention on the part of the general practitioner in the diseases of the body.

Dr. H. Z. Gill, a special committee on

*Croup*, read a lengthy paper in which he discussed the literature of the pathology of croup and diphtheria. He also discussed the treatment of these affections, and especially tracheotomy, and added to his former statistics of the operation in Illinois. The per cent. of recoveries from the operation up to date was 27½.

His conclusions as to the pathology of the two diseases were that there is nothing revealed by the microscopic or by the chemical examination of the deposit in the throat or elsewhere, by which the one disease may be distinguished from the other.

The next paper was by Dr. E. L. Harriott on

*Anæsthetics in Labor.* He had "circularized" the profession of the State and received replies from nearly twenty practitioners on the subject of his paper. All who had replied were pleased with the use of anæsthetics in labor, and most were warm in their enthusiasm. He advocated the use of anæsthesia much earlier than most. He would use it in the first stage of labor, and was sure it hastened the termination of this stage and of the completion of labor. He had never seen pains retarded by it; nor severe hæmorrhage. He would carry the agents to full insensibility, even in the first stage, and keep the patient under their influence most of the time till full delivery.

There was no hazard in this practice. No death had ever been reported from anæsthetics in labor.

Chloroform was his favorite agent and was the one used by most of his correspondents. This paper was discussed by Drs. Bird of Quincy, Palmer, McIntyre and others of St. Louis, and Reber of Shelbyville, and Dr. Steele.

A memorial was read from the Woman's Christian Temperance Union, asking the opinion of the society upon the necessity of ever using alcohol as a medicine, and whether ale and beer were beneficial as tonics.

It was, on motion, referred to a special committee of three.

The committee on Necrology presented their report, which included a biographical sketch of the late Dr. Thomas Bevan, which had been prepared by Dr. E. Ingals of the committee.

Dr. E. W. Lee, of Chicago, then read a paper on Tracheotomy.

This paper was discussed by Dr. Bird, who advocated operating without the tube.

Dr. Gill thought very much depended on the thorough care in the after treatment.

Dr. Porter, of St. Louis, advocated a longer incision both through the trachea and the overlying tissues. Nothing could be lost and much was gained in the ease with which the tube was removed and replaced and the trachea kept free from accumulations.

Dr. Gill introduced a resolution amending the by-laws so as to allow members to have copies of papers read before the society

for publication in medical journals, provided it be with the explanation that they were read before the society. The resolution was passed.

THIRD DAY. MORNING SESSION.

The only scientific business was the reading of a paper by Drs. Lee and Fenger, of Chicago, on Tuberculosis of Joints, with three cases of extirpation and exhibition of two of the patients. As this paper is soon to appear in the JOURNAL AND EXAMINER we will not summarize it.

A resolution was introduced and passed to the effect that the advertising of quack medicines by newspapers was an imposition upon the people, to their pecuniary loss, and often to their physical injury and discomfort, and was unbecoming any publication making pretensions to teach morality and religion.

It was voted to instruct the secretary to send a copy of this resolution to each religious newspaper in the United States.

The special committee on the memorial from the Woman's Christian Temperance Union, presented a report, the purport of which was that while the society recommended temperance in all things, its members felt that alcohol was, in its place, a valuable medicine that could not be dispensed with.

The report was adopted, but a special committee was appointed to report on the subject more fully at the next meeting.

In appropriate resolutions the thanks of the society were tendered the local committee, the railroad companies, Profs. Hodges and Irwell for their evening lectures, and Judge Snyder for his able evening address. The society then adjourned.

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ARTICLE VI.

THE MICHIGAN STATE BOARD OF HEALTH.

The regular quarterly meeting of the State Board of Health was held in Lansing on April 13. The members present were Dr. H. O. Hitchcock, of Kalamazoo; Leroy Parker, of Flint; Rev. D. C. Jacokes, of Pontiac; Dr. J. H. Kellogg, of Battle Creek, and H. B. Baker, secretary.

The president, Dr. Kedzie, being absent, Dr. Hitchcock was chosen president *pro tem*.

The secretary presented a letter from Dr. Kedzie, stating that the severe illness of his son, Prof. W. H. Kedzie, would prevent him from attending the meeting. In this connection the board adopted a resolution expressing sincere sympathy for Dr. Kedzie and family.

#### WORK IN THE OFFICE.

The secretary read the quarterly reports of work in the office for the quarters ending January 7 and April 13 respectively. After the meeting in October, 1879, a large number of copies of the *Lansing Republican* containing an abstract of the proceedings of the meeting and the complete report of the committee on sanitary conventions was sent out to manufacturers and dealers in sanitary appliances, and to sanitarians, in order to secure as large exhibits and attendance as possible. Circulars of the sanitary conventions at Detroit and Grand Rapids were also sent out from the office. Sixteen regular correspondents in the State have been added to the list. Mortality statements for the city of Lansing have been sent for each month to a large number of exchanges. The record of meteorological observations taken at the office and printed in the *Republican* are reprinted and sent weekly to about thirty-five observers of the board and contributors of meteorological data. One hundred and thirty-five monthly meteorological registers have been received from observers. The card catalogue system of keeping the library in the office has been adopted. The library numbers over 2,000 accessions. Daily papers containing accounts of the sanitary conventions at Detroit and Grand Rapids have been sent from the office quite freely. The secretary has completed a paper on "Glanders in Man and Animals" for the forthcoming annual report, and a paper on "General Sanitation," which was read at Detroit. There have been distributed from this office, 5,215 copies of circular 34, 6,258 of circular 35, and 3,129 of the document on the "Restriction and Prevention of Diphtheria."

Of circulars 36 and 37, transmitting blanks for annual reports of clerks and health officers, there have been sent of each, 1,369 copies. Annual reports have been received from about 575 clerks

and 550 health officers. A circular to supervisors of townships, asking for a return of name and address of health officer for ensuing year, has been sent out to the 1,440 townships. Copies of circular 38, relative to diseases in Michigan, 1879, have been sent to 143 regular correspondents. Circular 39, asking for the return of name and address of health officers of cities and villages, has been sent to 440 clerks, mayors and presidents. Blank meteorological registers to the number of 1,134 have been sent to observers; and 2,495 postal card blanks sent to observers of diseases. The compilation of material for the report for 1880 has gone steadily on. In the correspondence of the office 668 pages of the letter book have been used. New meteorological stations have been established at Hillsdale and Marshall, and arrangements started for two more—at Onondaga and Reed City. Of the communications received, 45 have been referred to committees of the board.

The secretary presented some documents issued by the local board of health of Tecumseh, as illustrative of what a live, energetic board of health might accomplish.

Mention was also made of the health officers and authorities of Lansing, who have done good sanitary work, and succeeded in establishing a system for the collection and registration of vital statistics, which requires burial permits, Lansing being the first city in the State to take this commendable step. Muskegon, under the lead of Mayor Holt, was also mentioned for active efforts for the prevention of disease.

A communication from C. H. Voute of East Saginaw, stated that he desired to form a circuit of towns and cities in this State, for using the odorless excavating apparatus for the removal of contents of privy vaults. A resolution was adopted recommending local boards of health to secure the cleaning of vaults by means of such apparatus, wherever the dry earth system is not in use.

The present editions of the documents on the Restriction and Prevention of Scarlet Fever, and on the Restriction and Prevention of Diphtheria, being practically exhausted, it was decided to have them revised, published in the next annual report, electrotyped, and a large edition of each document printed. As it is to

be electrotyped, local boards of health may procure any number of either document at a slight cost.

#### DIPHTHERIA.

The secretary stated that, inasmuch as diphtheria has been so prevalent in this State, it has been suggested by an officer of the national board of health that this was a favorable field for a systematic investigation of the causes of the disease, particularly as to what are its relations, if any, to filth. The subject was thoroughly discussed, at some length, and the great desirability of such an investigation was unanimously conceded, but the resources of the board are entirely inadequate for such a house to house inspection as seems essential.

The secretary was directed to correspond with the national board of health and see what arrangements can be made for such an investigation.

#### SANITARY CONVENTIONS.

The secretary was authorized to begin printing the proceedings of the recent sanitary conventions at Detroit and Grand Rapids as soon as practicable. The report of the board for 1879 is now in press, and will shortly be issued.

Dr. Kellogg, as committee on the disposal of decomposing organic matter, presented a paper on

#### DECAYING WOOD A CAUSE OF DISEASE.

He related experiments by Prof. Wm. H. Brewer, confirmed by himself, showing that when green wood was allowed to stand for some time in water the solution decomposes, and gives off very offensive odors. Even when the water was renewed again and again, the similar result ensued. The paper was prepared with special reference to the practice of putting sawdust in streams and ponds, and it tended to confirm the belief that the practice is frequently productive of malarial and diarrhoeal diseases.

#### SANITARY SURVEY.

Dr. Jacokes, chairman of the committee on such survey, made a statement relative to the desirability of having a sanitary survey of the State, and as to its probable extent and cost.



## SANITARY SCIENCE EXAMINATIONS.

July 14, the day after the next meeting of the board, it will, if candidates apply, examine them in sanitary science, giving a certificate of merit to those who pass a satisfactory examination. An outline of the plan of these examinations will appear in the forthcoming report for 1879.

An unusual amount of routine business was transacted, auditing of accounts, etc. The next meeting of the board will be July 13.

## ARTICLE VII.

## STATE MICROSCOPICAL SOCIETY OF ILLINOIS.

The annual meeting of the State Microscopical Society of Illinois was held at the Academy of Sciences, 263 Wabash avenue, Friday evening, April 23, 1880.

The treasurer's report showed a highly satisfactory financial condition, about \$200 having been paid in during the past year, while the expenditures were less than \$50.

The following papers have been read before the society since the semi-annual meeting, last October :

Recent Microscopical Work, by James Colgrove.

The Microscopical Examination of Signatures, by Lester Curtis.

The Microscopical Examination of Dust, by A. C. Thomas.

A New Observation on the Histology of the Fœtal Lung, by Lester Curtis.

The Microscopical Examination of Tissues after the Administration of Mercury, by S. V. Clevenger.

The Study of the Cell, with Reference to the New Theory, by Lester Curtis.

Plant or Animal? A Popular Description of some of the Myogastric Fungi, by the Secretary.

Notes on Micro-lithology, by A. C. Clark.

The Intra-ovular Life of the Chick, by C. H. Kimball.

The following gentlemen were elected: President, B. W. Thomas; Vice-Presidents, Lester Curtis, M.D., Prof. E. J. Bastin; Secretary, E. B. Stuart; Corresponding Secretary, James

Colgrove; Treasurer, W. H. Summers; Trustees, Prof. E. J. Hill, Dr. S. J. Jones, Dr. F W Mercer, H. M. Thompson and Chas. Boring.  
E. B. STUART, *Secy.*

At a meeting of regular physicians of Aurora and vicinity, held at Aurora, Ill., March 15, 1880, a medical society was organized and named the Aurora Medical Society. It is designed to be auxiliary to the Illinois State Medical Society and to meet on the second Monday of January, March, May, July, September and November. The officers for the present year are as follows: President, A. Hard, M.D. of Aurora, Ill.; Vice President, D. S. Jenks, M.D. of Plano, Ill.; Secretary and Treasurer, M. M. Robbins, M.D. of Aurora, Ill.

HYDRATE OF CHLORAL AND OXIDE OF ZINC IN ACUTE INTESTINAL AFFECTIONS OF CHILDREN.—(*Archiv. Clin. Ital.*, No. 3, 1880.)

Dr. James Tison has found useful a combination of hydrate of chloral and oxide of zinc in cases of intestinal irritation, infantile diarrhœa, summer diarrhœa, diarrhœa of nurslings, etc. He gives the chloral in clysters and the oxide of zinc by the mouth. At the same time a strict dietetic regime is enforced. A solution of a (3j)gram and a half of chloral in 60 grams of starch water is made, of which a teaspoonful to a teaspoonful and a half is injected two or three times a day. In addition to this, a teaspoonful of the following mixture is given every five hours:

Oxide of zinc .....	(3j)	1	50
Gum Arabic } .....	āā	7	50
Sugar }			
Lactopeptine.....	(5j)	3	50
Cannella water.....	(5j)	32	

## Foreign Correspondence.

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### ARTICLE VIII.

VIENNA, April 24, 1880.

MESSRS EDITORS:—The medical visitor in Vienna loses no time in seeking the great hospital which makes this city the Mecca of the medical world, attracting hither, as it does, knowledge-seekers not simply from America, North and South, but from all Europe, even England and France. Permit me to anticipate right here, and say that while I have as yet no personal acquaintance with the professional advantages in the other European capitals, I am assured by men who have studied in London, Paris, Berlin and Leipsig, that the facilities here surpass all others. One gentleman, after a thorough trial of Paris and Berlin, came to Vienna and was so pleased that he has remained here three years; another, after studying here a while, went to Paris, but returned to Vienna in less than three months. An English gentleman here acknowledged that while the London hospitals were more elegant, and many of the teachers, in his opinion, as renowned, yet the material there is not nearly so accessible as here—the London hospitals being scattered all over and around that immense metropolis, while in Vienna, all the instruction, clinical and didactic, is given within five minutes' walk of the hospital gate.

One approaches the hospital without any suspicion of its beneficent character; it is a bleak, dingy, stuccoed affair, bordering the sidewalk of a narrow street; it might be a hotel, a wholesale business house, a prince's palace or a private dwelling, for in Vienna these are all alike unattractive and forbidding in their external appearances. But the legend over the portal—"Salus

et Solatio Ægrorum—Franciscus I., MDCCCXXXIV"—reveals to me the fact that this is the way we long have sought. Passing the gate, we enter a square court or park, about two acres in extent, enclosed by the hospital pavilions and rich in shrubbery, grass, trees, fountains, etc. The graveled walks of this very attractive place are lined with settees, occupied largely by the patients, male and female, who are loosely clad in a grotesque attire of striped linen, strongly suggestive of a circus clown or a penitentiary convict. A little exploration discloses several such courts, all enclosed by hospital pavilions, comprising in all perhaps twenty acres. The buildings themselves are old, dingy and devoid of many of the modern improvements—speaking tubes, electric signals, elevators, etc. They are generally, however, well heated, fairly ventilated and *scrupulously clean*. In the surgical pavilions we find at any time one or more wards empty and in process of renovation—scraping and whitewashing of walls, etc. The pavilions are under the jurisdiction of the respective professors, each of whom has his clinic-room connected with his wards.

Here we find not only 2,500 patients, but also an array of renowned instructors; and the question arises, shall we first visit Billroth or Bamberger, Brücke or Stricker, Hebra or Neumann, Carl Braun or Spath, Stellwag or Politzer? As conductors of the expedition, I shall guide the JOURNAL reader first to Billroth, who heads the list alphabetically and perhaps otherwise, also.

We enter a room provided with seats for 250 persons, the center of which is an arena perhaps fifteen feet square. In the middle of this stands a revolving operating table, while around the sides are arrayed several cases full of glittering instruments. Suspended on the wall are two reservoirs marked respectively three per cent. and one per cent. (carbolic acid solution), extending from which into the arena are two rubber tubes terminating in stop-cocks. Several assistants in clean linen dusters, are busy preparing, while thirty or forty students lounge on the narrow, straight-backed, antiquated benches. About half an hour after the hour appointed for the opening of the clinic (9 a. m.), the hum of conversation is suddenly hushed, and there enters the Herr Hofrath and Professor Theodor Billroth—a man of fine

presence, distinguished by a well-formed head, benevolent countenance and prodigious abdomen. Without any formality he begins to speak, but unfortunately in a tone so low that his words are audible at the distance of only a few feet; the difficulty in hearing him is increased by his habit of sauntering around the arena and of occasionally seating himself in a chair with his back to as many auditors as possible. As a result, the attention of those present is bestowed upon books, papers, conversation, etc., and the great surgeon talks to perhaps a dozen listeners.

Meanwhile, his ten assistants, in the regulation linen duster, are preparing a patient—a process worthy of our attention. The anæsthetic is a mixture of chloroform, ether and alcohol; the inhaler a mere strip of canton flannel stretched over a metallic frame, held an inch or so above the nose and mouth. Only a few drops are administered at once, and the pulse is carefully observed by an assistant, who does nothing else during the entire operation. Meanwhile, another assistant having carefully washed his hands, exposes the part to be operated upon, shaves it carefully—even if it be a woman's cheek—scrubs it thoroughly with a nail brush, soap and water, deluges it with carbolized water, and then covers the adjacent parts with towels saturated with carbolized solution. A fourth assistant, during this interval, selects the instruments to be used and immerses them also in a carbolized solution; a fifth plunges about thirty sponges, previously washed and carbolized, into a jar of the same solution—a large number being required even for a trivial operation, because a sponge is used but once, and then re-carbolized. Finally, Billroth takes a scalpel and proceeds with great care and deliberation to make the necessary operation, occasionally stopping to explain to the class various points of interest. One of the most interesting features of the performance is the watchfulness and alacrity of his numerous assistants; they anticipate all the operator's wants; the needed instrument is at his elbow when he wants it; a sponge is constantly hovering over the wound, and yet everything is done quietly and smoothly, Billroth himself setting an example of courtesy and good humor toward all.

Every bleeding vessel, small as well as large, is temporarily closed by means of a “bull-dog” forceps, and finally tied with

catgut. At the conclusion of the operation, the lips of the wound are approximated by silver wires fastened with lead-plates, and then fixed in exact apposition by silk sutures set very close together, space being left only for several large drainage-tubes, which are tightly hugged by the lips of the wound, cut off close and fastened with safety-pins. The usual antiseptic dressing is then applied; great pressure is always made, the elastic bandage being frequently called into requisition for that purpose, applied, of course, outside of the gauze.

No reference has been made to the carbolyzed spray. As a skeptic in regard to the antiseptic theory, I am pleased to state that Billroth has discarded his atomizers, or rather has determined not to employ them until convinced by results that they are desirable. The other surgeons here have done likewise—I have not seen the antiseptic spray used in Vienna. Yet, as the reader has observed, he retains the undeniably valuable feature of Listerism—cleanliness—and has thus far secured all the good claimed for the Listerian system. The valuable points in Billroth's practice appear to be: 1, the careful ligation of all blood-vessels; 2, the accurate adjustment of the lips of the wound; 3, the compression of the wound. I have seen a dressing removed five days after a bloody operation on the face, and the wound showed no sign of suppuration, the edges entirely free from inflammatory exudate. Union by first intention is an ordinary result, even for some amputations.

Their management of fractures and their mechanical surgery in general is, in my observation, inferior to ours. They seem to lack much of the mechanical ingenuity and tact which characterize our surgeons—dressing fractures of the thigh solely by extension, *a la* Buck, for example. Yet it must be confessed that their results compare not unfavorably with ours, even in this respect. They have one advantage in the apparent fortitude of their patients, who endure suffering and inconvenience with wonderful equanimity. I say apparent fortitude, for the real explanation may lie in their insensitive nervous systems rather than in their self-control. I have seen an operation on the face continue three-quarters of an hour, during the last thirty minutes of which



no anæsthetic was administered, and yet no complaint was heard from the patient.

The amount of surgical material here is immense, as may be inferred from the fact that Billroth and Dumreicher give each a daily clinic from two to two and a half hours in duration, or from the other fact that Billroth recently performed eight ovariectomies in one week.

These clinics are but one of the valuable features of surgical instruction here. The chief assistants, three in number, give private courses in minor surgery, diagnosis and treatment of fractures and dislocations, applications of dressings, etc., to illustrate which they have access to all the surgical wards. They give also valuable courses in operative surgery on the cadaver—first performing the various operations—ligation of arteries, amputations, excision of joints, herniotomy, lithotomy, etc., before the class, and then superintending the performance of the same by the various students. Such a course costs about eight dollars, and requires sixty to seventy hours, during which each student performs every operation under the personal direction of the instructor. Such instruction is, of course, possible only where material is cheap and abundant, and this is eminently true of Vienna, where a dissecting ticket, costing \$2.50, entitles a man to all the material he wishes for a *year*.

In the other departments of the hospital, in the great "Poliklinik" or free dispensary (also under the care of the university), and in the various laboratories of the college one finds equally good advantages, some of which will receive our attention later.

W. T. BELFIELD.

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RETENTION OF LIFE IN THE NEW-BORN.—Dr. Hoffman calls attention in the *Medical Record* to a case in which the cord formed a clove-hitch around the child's neck, so tight that for at least thirty minutes there was complete strangulation, yet persevering efforts at resuscitation were successful. He also speaks of other reported cases in which from one to four hours had elapsed without respiration, and life was retained.

## Domestic Correspondence.

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### ARTICLE IX.

#### EXAMINATIONS OF THE ILLINOIS STATE BOARD OF HEALTH.

*To the Editors—Gentlemen:* Permit me, through your columns, to ask the members of the Illinois State Board of Health what reasons they have for licensing under-graduates who are still attending medical colleges, and who have not yet completed the ordinary course of reading (three years), to say nothing of lectures?

Why is it that in several instances such students have been licensed, who have never practiced?

And how can we account for the singular coincidence that the students so licensed have, as a rule, been far below the average under-graduate in their class examinations?

The above questions are suggested by four or five cases which have fallen under my personal observation, and with which I am thoroughly conversant.

The same inquiries have doubtless suggested themselves to others, and for them and the profession of the State, as well as myself, I hope the State Board may give a satisfactory explanation.

PRACTITIONER.

[The facts given by our correspondent, are those which are known to members of the profession in this city, and, we have reason to believe, are known also to the members of the board. The trouble seems to be that, given a certain standard, those who are able to meet it, are entitled to certificates. The standard of the board in its examination should be evidently raised above the grade of a first year's medical student, where it is plainly at present.—ED.]

### Reviews and Book Notices.

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ARTICLE X.—DIPHTHERIA; ITS NATURE AND TREATMENT. By Morell Mackenzie, M.D., London, Senior Physician to the Hospital for Diseases of the Throat and Chest, etc. Lindsay & Blakiston. 1879.

This is a work of one hundred pages, and gives in a concise manner the definition and history, etiology, symptoms, paralysis, diagnosis, pathology, prognosis and treatment of this terrible disease. It also has a chapter on laryngo-tracheal diphtheria, one on nasal and one on secondary diphtheria.

The author believes it to be a disease of antiquity, and that under various names it has existed "many thousand years," and that the exciting cause is a *specific contagion*. He speaks of the manner in which the poison enters the system, and the mode in which the poison is diffused.

Six different forms of the disease are described and the symptoms of the various stages in each fully and carefully considered.

We next find a short chapter on paralyzes, which, excepting cardiac syncope, are regarded as the only serious sequelæ to the disease.

The chapter on diagnosis is not as full, perhaps, as could be desired, and the author, in his description of catarrhal diphtheria, presents the picture of what many in our midst call follicular or herpetic tonsillitis. Dr. Mackenzie, however, speaks of his hesitation to attribute the symptoms in this mild form to a disease "the very name of which is heard with consternation."

In the chapter on pathology, we find a description of the exudate in the words of Rindfleisch, and the parasitic theory of Oertel, so fully set forth in Ziemssen's Cyclopædia. The changes

also which may and frequently do take place in other tissues and organs, in the course of an attack of diphtheria, are here presented.

About everything known in regard to the treatment of this disease is fully considered under four heads; (1) The recuperative agents; (2) the alleged specifics; (3) the antiseptics; and (4) the expectorants.

Of the three concluding chapters, the one on laryngo-tracheal diphtheria (formerly called croup, as the author remarks), is very valuable. It discusses quite fully the identity or non-identity of the two diseases, and presents some facts which I do not now remember to have seen in any other work. The following quotation evidently represents the author's opinions: "To suppose that there are two kinds of follicular inflammations of the larynx, one in which the cause is the diphtheritic poison, and the other in which the cause is some other undiscovered influence, is totally opposed to all probabilities."

The book, to the busy practitioner, cannot but be a most valuable one. It contains, it appears to the reviewer, nearly every thing of known value in regard to this dreadful disease.

C. W. E.

ARTICLE XI.—THE STUDENT'S GUIDE TO DISEASES OF THE EYE. By Edward Nettleship, F.R.C.S., etc. Philadelphia: Henry C. Lea. 1880. Chicago: Jansen, McClurg & Co.

The author deemed it necessary to apologize for the publication of this book by saying that none of the manuals already before the public "appeared exactly to cover the ground most important for the beginner in clinical ophthalmology."

If this phrase means anything, we must regard it as the author's claim that his book covers more exactly than others the ground "most important for the beginner." To investigate the title to this claim was our object in examining this book.

We have found nothing in the body of the book, represented by its part II, in which this manual materially differs from similar books. This part II is devoted to the diseases of the eye; its chapters are arranged upon the anatomical parts of the eye—as

in all ophthalmic text-books—and the context is just as crammed as in other manuals.

The part III is a valuable addition, not found in similar books; it is a clear exposé of the intimate relation of many diseases of the eye to general diseases.

But we are sorry to say the first part of the work falls far below the grade we apply to a guide-book which is said to cover exactly the ground most important for the beginners. We know of nothing which is more important for the clinical student than a thorough familiarity with the correct methods of examining the eye. And a book intended to guide a beginner in his attempts at diagnosing diseases of the eye, must particularly impress upon his mind the necessity and great value of a methodical examination; it must teach him to proceed always in a systematic way to be sure that nothing will escape his attention; and, above all, it should make him thoroughly acquainted with the appearance of the normal eye, so that he can appreciate any deviation from the normal appearance. Our experience in clinical teaching has satisfied us that the great difficulty commonly experienced by medical students in recognizing pathological alterations of the conjunctiva and anterior portion of the eyeball, is the natural or necessary consequence of their imperfect acquaintance with the normal appearance of these structures. The fewest students visiting the eye clinics have ever seen a normal conjunctiva or examined a normal iris carefully enough to tell at once a physiological variation of its appearance from a pathological alteration. All text-books on diseases of the eye—the guide-book before us included—are very particular to make the student thoroughly acquainted with the appearance of the normal fundus, because, without this knowledge, he could not tell the normal from the abnormal any better than a boy can tell the difference between wheat and oats unless he learned it. But the same works are strangely non-committal in regard to the appearance of the normal conjunctiva and other important parts of the eye. This seems to us a particularly serious defect in a book expressly written for the guidance and instruction of the beginner.

But if we find fault with the first part of the book for what it does not contain, we cannot even then approve of the arrange-

ment of its contents. Take the second chapter on "External Examination of the Eye." It begins with *irregularity of the corneal surface*, jumps to the *tension of the eyeball*, *mobility of the eyeball and squint*, *diplopia*, *protrusion of the eye*, and then returns to the anterior portion of the eyeball to examine the *blood-vessels visible on the surface of the eyeball*, the *color of the iris*, the *pupils*, and concludes with tests for *field of vision*, *refraction*, *accommodation*, *color-blindness*, etc. Such ill-arranged, disjointed description of the examination of the eye is a very untrustworthy guide to lead a student through the puzzling labyrinth of symptoms to a clear conception of their meaning; an examination after this pattern is too unmethodical to be recommended to a beginner.

But for this defect, the book would make a very useful little handbook for those medical students who have a natural aversion to the larger, more complete text-books on ophthalmology.

F. C. H.

ARTICLE XII.—HEARING AND HOW TO KEEP IT. By Charles H. Burnett, M.D., etc. Philadelphia: Lindsay & Blakiston; 1879; 16 mo., pp. 152. Chicago: Jansen, McClurg & Co. Price, 50 cents.

Among the many useful treatises in the series of the American Health Primers, this little book, from the able pen of Dr. Burnett, should become one of the most useful and popular. The crying ignorance of most people in regard to the proper care of the ear, calls loudly for the dissemination of the knowledge of hygienic rules written for the people in the plain language of the people. For no organ of equal importance in the whole human body is so flagrantly neglected, so roughly used, and so carelessly exposed as the ear. Any old woman's suggestion for the relief of deafness is readily accepted and acted upon; any drops said to cure earache or toothache, from the harmless sweet-oil to the harmful pain-killer, are put into the external auditory canal. On the other hand, people are amazingly indifferent to the most serious dangers for their audition; they make no attempt to stop a running from the ear of a child; they allow catarrh to impair their hearing many years, instead of having its



bad effect arrested right at the beginning. But we must not blame the ignorance of the laity alone for this indifference and carelessness. Too often they are encouraged by general practitioners who do not appreciate the grave nature of these aural diseases, and fail to urge the necessity of early and proper treatment. To these practitioners the perusal of this book will amply repay the sacrifice of the brief hour it takes to read it. It is arranged in three parts; Part I is a brief sketch of the anatomy and physiology of the ear; Part II treats of the chief diseases and injuries of the ear; and Part III contains general hygienic rules for the care of the ear in health and in disease. The following quotation, selected from the chapter on foreign bodies in the ear, may serve as a specimen of the author's style: "It may be said, for the comfort of friends and parents, that no bead, button, 'spit-ball,' bean, grain of wheat or maize, or any similar small object which a child could put into his ear, will do any harm, *if let alone* by all save one entirely conversant with the structure of the ear, and properly supplied with instruments for examination and treatment. If your child, therefore, gets any such foreign matter in its ear, rest assured such object has not gone beyond the reach of surgical skill. The harm in such cases *usually* arises from the unskillful means resorted to, in haste and consternation, for its removal. Let it alone until it can be properly removed." For this golden rule alone the book deserves our hearty recommendation.

F. C. H.

ARTICLE XIII.—OPHTHALMIC OUT-PATIENT PRACTICE. By Charles Higgins, F.R.C.S., etc. Second edition. Philadelphia: Lindsay & Blakiston. 1879. Chicago: Jansen, McClurg & Co.

This is a specimen of the "multum in parvo" pattern, touching, in 116 small pages, upon everything, from "a discharge from the eyes" to the ophthalmoscope and the diseases of the fundus. Such rambles are very unprofitable for a student, for he finds—to use an expressive German phrase—*Zu wenig zum Leben und zu viel zum Sterben* (not enough to live and too much to die with hunger).

F. C. H.

## BOOKS AND PAMPHLETS RECEIVED.

- Homœopathy: What is it? By A. B. Palmer, M.D. Detroit: Geo. S. Davis. 1880.
- Foreign Bodies in Surgical Practice. By A. Poulet, M.D. Two volumes. New York: Wm. Wood & Co. 1880.
- Venereal Diseases, Including Stricture of Male Urethra. By E. L. Keyes, M.D. New York: Wm. Wood & Co. 1880.
- Physical Diagnosis (Hand Book). By Dr. Paul Guttman. New York: Wm. Wood & Co. 1880.
- Atlas of Histology. By E. Klein, M.D., and E. Noble Smith, M.D. Part X. Philadelphia: J. B. Lippincott & Co. 1879.
- Ethylization: The Anæsthetic Use of the Bromide of Ethyl. By R. J. Lewis, M.D. (Reprint from Medical Record.)
- Modern Abuse of Gynæcology. By Clifton E. Wing, M.D., Boston.
- Rectal Feeding in Disease. By W. W. Potter, M.D., Batavia, N. Y.
- Thirteenth Annual Report of Cincinnati Board of Health, for the year ending Dec. 3, 1879.
- Importance of Anal Fissure in the Treatment of Diseases of Women. By R. S. Sutton, M.D., Chicago.
- Transactions of American Dental Association, Nineteenth Annual Session Chicago: Knight & Leonard.
- A Case of Intrauterine Ichthyosis. By Wm. R. Smith, Sr., M.D., Cairo, Ills. Three wood cuts.

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THE late concours held at Rush Medical College for the position of Clinical Adjunct to the Chair of Diseases of Children, resulted in the appointment of Dr. J. Suydam Knox, of Chicago, who is already well known to the profession as a scientific man, and, moreover, highly esteemed socially.

### Editorial.

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At a meeting of the Chicago Gynæcological Society, held Dec. 27, 1878, the subject of placenta previa being under discussion, Dr. Edward Warren Sawyer called attention to a peculiarity of the uterine tissue at the placental site which had not before been observed. *THE JOURNAL AND EXAMINER*, for Feb., 1879, page 175, contains a report of these remarks. The speaker said: "Another point is one which I have never seen alluded to in the books, namely, the friability of the uterine tissue upon which the placenta is developed." After speaking of two fatal cases which he thought due to a tear of this friable area, he said: "In the light of this experience, I would in future cases, use extreme care in all procedures which would stretch the uterine tissue in the cervical zone, upon which the placenta is attached."

The *London Lancet*, for Oct. 25, 1879, contains an article by Dr. George Roper, of London, in which the writer reports the same observation, but made independently of Dr. Sawyer.

The *Boston Medical and Surgical Journal*, Jan. 1, 1880, alludes to this important observation of Dr. Roper, but seems ignorant of the fact that Dr. Sawyer ante-dated Dr. Roper by nearly a year. In a recent letter from the latter to Dr. Sawyer, the writer says: "You have clearly hit on the same observation as myself;" and further: "I am by no means ambitious as to the originality of this observation, and as I shall probably write an article on placenta previa, when I have time, I shall have much pleasure in referring to your own observations."

The London gentleman having thus politely admitted the priority of Dr. Sawyer, we feel it to be just to call attention to the subject in this manner.

### Selections.

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**TWO NEW ANÆSTHETICS.** Read before the Montgomery County Medical Society. By J. C. REEVE, M.D., Dayton, Ohio.

The dissatisfaction of the profession with the two great anæsthetics, chloroform and ether, has long been manifested. This feeling has its origin in the dangers of the one, which seems to be more manifest with every year, and the practical disadvantages of the other, and has led to constant investigation of new compounds or trials of mixtures of the two. Bichloride of methylene is the only new agent which has attained any sound reputation, and this has scarcely been used at all, except by a single individual; and of the various mixtures of chloroform and ether, some of them used here and there to considerable extent, it may be said that no one of them has succeeded in gaining such an amount of confidence as to make its use general.

At present two new articles are rapidly coming before the profession. The claim is made for each that it is more pleasant and manageable than ether, less dangerous than chloroform. It is my purpose to-day to call your attention to these two agents, and present briefly the testimony in their favor.

The first is the bichloride of ethidene. This is a liquid, scarcely to be distinguished from chloroform in appearance or smell, with a boiling point of  $58^{\circ}$  C. and a vapor weight of 3.428. It is isomeric in chemical constitution with the dichloride of ethene, a substance which is very dangerous for inhalation, the formula of each being  $C_2H_4Cl_2$ . Ethidene, as it is called, is receiving attention in England, the result of the labors of a committee appointed by the British Medical Association for the investigation of anæsthetics, partial reports of which body are published in the

*British Medical Journal* of January 4th and 25th, and June 21st, 1879. The origin of the committee will be everywhere received as a guarantee of the character of the work done, and it is needless to say that the most thorough care and scrupulous exactness are shown. The experiments upon animals were by opening the trachea and administering the vapors of different anæsthetics through a tube, the arterial pressure being measured by the sphygmograph, and direct observation made of the heart's action, the sterum having been removed. Under ethidene the arterial pressure was somewhat diminished, but not nearly so much as by chloroform, and never to total extinction; nor were there the wide variations at different times in the same animal that chloroform caused. In frogs and rabbits the anæsthetic condition was produced in from four to five minutes, and kept up from twenty-six to forty minutes, the heart beating steadily all the time. In dogs anæsthesia was produced in from two to three minutes, without failure of the heart action. A marked and immediate effect upon cardiac action was produced by substituting chloroform vapor for the ethidene.

Clinical experience with ethidene has not yet been extensive. It was used already by Snow, and about three pages of his work on anæsthetics (1858) are devoted to it under the name of "monochlorated chloride of ethyl." The difficulties of manufacturing it and obtaining it pure prevented him from continuing his investigations; but he expresses the opinion, based on its chemical qualities, that it is pretty certain that it would not be liable to cause the sudden deaths which have occasionally been produced by the administration of chloroform, even if it were given freely and with no great care. He reports sixteen cases in which he administered it for various operations. In one the operation lasted ten minutes, and another must have been of longer duration, as it was for ununited fracture of the tibia and fibula. In all it acted well, and no vomiting followed, although in three cases a meal had been taken just before the inhalation. How much more information upon this anæsthetic we should have had from the lamented Snow it is impossible to say. While writing the sentence which gives the above facts, he was seized with the paralysis, which was a prominent symptom of his last brief illness.

There is a report of six administrations in the *Medical Times and Gazette*, of January 18th, 1879, by Dr. Thomas Bird, of Manchester.\* Two of the patients were children, one aged three months, and the other two years and nine months. The longest time of administration was sixteen minutes. It seems to have acted kindly in all, but sickness followed in one case.

The report of the committee above alluded to gives six administrations to patients, and states that it had no injurious effect upon respiration, no indication of asphyxia were shown, and the heart's action was unaffected, anæsthesia was promptly produced, was complete, and slight retching followed in two cases. The committee indorses the opinion of Steffin, as given in Binz's *Therapeutics*, that, as compared with chloroform, ethidene is pleasanter, more rapid in action, produces no excitement during, nor vomiting after administration, that there is a more rapid recovery from it, and, altogether less danger attends its use.

I have not been able to obtain a specimen of this article, or I should have had some practical observations to record. Its price will, however, prove a serious bar to its introduction. The importers quoted it to me at three dollars per ounce.

Since this article was written I have had an opportunity of consulting Kappeler's new work on "Anæsthetics,"† and find that his very favorable notice of this anæsthetic closes with the following discouraging paragraph :

"Unfortunately the occurrence of a death from this article in Berlin, destroys early the hopes which had been cherished of it and will not permit of a more extended trial."

No particulars are given.

The second new anæsthetic is bromide of ethyl, or hydrobromic ether ( $C_2H_5Br$ ). It is a volatile, colorless liquid of pleasant ethereal odor, spec. gr. 1.419, thus almost as high as chloroform. It boils at  $106^\circ F$ . Its vapor density is 3.734; and an important characteristic of the vapor is that it is not inflammable, thus the dangers arising from administering ether by candle-light are obviated. It is needless to say that this is a very important point.

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\* Quoted from Turnbull on "Artificial Anæsthesia," Second Edition, 1879.

† Anæsthetics. Lieferung xx of Bilroth's *Deutsche Chirurgie*, 1880.



For the introduction of this article into practice we are indebted to Dr. Lawrence Turnbull, of Philadelphia, one of the surgeons to Jefferson Medical College Hospital; and in his work on "Artificial Anæsthesia" (sec. ed. 1879) will be found a full account and description of it.

Experiments upon animals with this liquid are lacking. A number are detailed in Dr. Turnbull's work, but they are not such as are to be desired, or as are demanded in a question of the comparative merits or the safety of a new anæsthetic. Merely to state that frogs and dogs were anæsthetized, the amount of the vapor used and the time they were under its influence, is not enough, and we very much need some careful and accurate experiments and observations with this remedy, such as those carried out by the British committee in investigating ethidene.

But if in experiments on animals we are behind ethidene with hydrobromic ether, our clinical experience has been greater. Dr. Turnbull details in his work the particulars of twenty-five administrations for various operations. Three of the cases were children of six, three and three years of age. We copy his conclusions:

	Min.	Sec.
Longest time taken to place under anæsthetic influence...	5	
Shortest, ditto....	0	30
Longest time under influence.....	60	

Largest quantity consumed, eight ounces. Vomiting occurred in four cases after the administration; one of the patients had taken dinner before the operation.

Dr. Turnbull's example has been followed by others, notably by Dr. R. J. Levis, of Philadelphia. His experience was published in the *Philadelphia Medical Times*, and has been copied generally in medical journals, so that it is undoubtedly familiar to you, and I need give only the points generally. He has been so much pleased with it that he now uses it exclusively as an anæsthetic; has administered it for various operations, minor and capital; once for amputation of the thigh; forty minutes is the longest time of administration stated, and eleven drams the largest quantity used. He states that general excitement and struggling occur much less frequently than with chloroform or ether; that it does not influence the circulation, except to sometimes produce

a slight increase in the rapidity of the heart's action; that it influences the respiration but little, and that nausea and vomiting appear to occur much less frequently than after the other anæsthetics. There are two prominent characteristics of the action of hydrobromic ether, rapidity of action, and rapidity of recovery from its effects. These were shown in Dr. Levis' observations. He estimates that its full effect is produced in one-third less time than that of chloroform, and recovery is even still more rapid.

The following trials of this new anæsthetic were made to test its merits, and to obtain personal experience of its effects. For the record of occurrences after loss of consciousness and for care and attention during administration, I am indebted to my friends Drs. Pilate and Conklin:

March 14th. Four hours after eating a moderate breakfast I proceeded to inhale the bromide of ethyl, in the recumbent position, from a bottle just opened, labeled "1 oz. bromide ethyl." About one-fourth of the contents was poured into an Allis' ether inhaler. The first and immediate sensations upon inhaling it were a sharp pungent impression on the air passages, a sense of warmth, rapidly extending, and exhilaration. Already with the second inspiration I felt a decided influence upon the brain and began to talk, anxious to continue speaking as long as possible, and to state my sensations. A rapid beating in the ears is a constant symptom with me in taking chloroform, and immediately precedes entire loss of consciousness. I remarked its presence now, and also its early appearance. It could not have been later than the third or possibly the fourth inspiration when I noted it, and this, as with chloroform, was the last sensation.

Upon opening my eyes I immediately collected myself, and remembered all; could talk clearly, and had no confusion of thought. I felt a slight sense of nausea and a feeling of languor. Eight minutes afterwards I got up and walked about without dizziness, and am confident I could have done so sooner. I did not attempt it sooner, because I felt that sickness would ensue if I arose. The feeling of nausea remained until I commenced eating my next meal, about forty minutes later.

Pulse at beginning 80, just after ascending stairs. Two drams administered. Symptoms began to be manifested after two respi-

rations. Spoke of general warmth, pleasant sensations and beating in the ears. Anæsthesia produced in one minute and a quarter; in another quarter minute it was profound, as tested by knife point. Pulse during the first minute ran up nearly to 100, then fell during next minute to about 70, feeble and intermittent. Pupils unchanged, normal; no struggling or excitement; but tetanic clutching of the inhaler, so that it could be gotten away only with difficulty. The anæsthesia lasted only one minute and a half, then awakening without mental confusion. Pulse seven to eight minutes later, 64.

I was not satisfied with this experiment, particularly in regard to the irregularity and intermittence of the pulse, not a very assuring symptom in anæsthesia, and a result not agreeing with other observers. I had a suspicion from this fact and from the nausea that the specimen was not pure. The bottle bore the name of a house which is always a guaranty of the good quality of medicines; but in the early period of manufacture of a new article, it would not be surprising if perfection was not immediately attained. I therefore obtained another specimen\*, and one week after the above trial again inhaled it. Being in the recumbent position, four hours after eating, one dram, by measure, was poured in Allis' inhaler. I aimed to take it slower this time, and counted the respirations aloud to mark when conscious action ceased. I immediately felt the same grateful and pervading glow of warmth all over the body; counted to the seventh inspiration; beating in the ears was again the last recognized impression.

Pulse before, 80; at the end of the first minute, 120; one and a half minute at the rate of 100; at the end of two minutes, 78. No irregularity or intermittence. Pupils unaffected. Totally unconscious in one minute. Consciousness returned in three minutes.

It was my design to push the inhalation farther this time, and to test muscular relaxation as well as to decide in regard to the irregularity of the pulse. Feeling that this had not been done, after about fifteen minutes, I took it again. Two measured drams were poured on the inhaler, and I placed it over my mouth and

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\* From the house of John Wyeth and Bro., Philadelphia.

and nose. The impression was much stronger on the nose and air passages, and the first inspiration made me cough. I then counted to third inspiration and was gone. Pupils the same as before, unaffected; pulse, before taking, 78; at the end of first minute, 124; one and a half minute 100; and of two minutes 78; no irregularity or intermittence. Anæsthesia in one minute. At the end of three minutes from the time of beginning, got up and walked across the room, and could have staid up. As an effort at prolonged anæsthesia this was not, therefore, a success. In eighteen minutes I was on my way driving to see a patient. I had not the slightest nausea after these two inhalations; felt, if anything, better than before, a sense of what the French call, *bien-être*.

My next trial of the agent and first attempt at administration was not satisfactory. The patient was a man aged about fifty, a wiry, muscular fellow, of the type and build likely to give troublesome symptoms with any anæsthetic. He was placed on the table for an operation for hæmorrhoids by Dr. Conklin. I had brought with me for the administration a large conical sponge, with which I constantly gave the A. C. E. mixture, and have no difficulty. Upon this I poured two drams of hydrobromic ether, and placed it over his mouth and nose. After one, long deep inspiration his face became deeply flushed, and he soon began to talk and then shout. More of the liquid was poured on the sponge; but his movements interfered with the inhalation of it with promptness; muscular rigidity then came on and was marked; respiration was very nearly if not quite stopped for a time by tetanic spasm of the chest. These symptoms were almost as bad as I have ever seen from ether, chloroform or the mixed vapors. I have seen worse muscular action and rigidity, but this would pass for as bad as generally met. During this time the ether was rapidly added until the supply was exhausted (13 drams), and sufficient relaxation was not produced to make the operation feasible. No observations could be made, of course, of the patient's pulse. He recovered consciousness quite rapidly, as compared with other anæsthetics, and suffered no unpleasant after effects.

This was not, of course, a fair trial of the remedy. The mode of administration was decidedly faulty. It is an ether and must

be given as an ether; and that this is imperative is the lesson to be learned from this failure.

My personal experience with hydrobromic ether fully sustains the observations of others as to its exceeding promptness of action, and the rapidity with which recovery from its effects takes place. I can also say that it is pleasanter to inhale than chloroform, which is not very unpleasant, and infinitely pleasanter than ether.

Our experience must be much increased, of course, before judgment can be passed as to the relative merits of this anæsthetic. At present the testimony is positive as to the rapidity of action and efficiency, and decidedly in its favor as to safety.

I append the opinion of Dr. Levis, delivered as the result of his more extensive and later experience. "I have used bromide of ethyl in the surgery of two large general hospitals and in private surgical practice, under the most varied circumstances, which could be required to test the merits of an anæsthetic. In my use of it, in the most abnormal conditions of debility and shock of injury, in capital operations, through protracted periods of administration, in patients from early infancy to extreme old age, it has always proved satisfactory, and free from manifestations of danger. I express my conviction that it is practically the best anæsthetic known in the profession."\*

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CONTAMINATION OF DRINKING WATER BY FILTRATION OF ORGANIC MATTER THROUGH THE SOIL.† By VICTOR C. VAUGHAN, M.D., PH.D., Lecturer on Medical Chemistry in the University of Michigan, assisted by P. E. NAGLE.

There seems to be a wide-spread belief that in disposing of decomposing organic matter it is only necessary to remove it from sight by burial in the earth. All through the rural districts and in the towns and many small cities of this country, privy-vaults, cess-pools and even cemeteries are located in close proximity to cisterns and wells. A few feet, or at most, a few rods of inter-

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\* N. Y. Medical Record, March 27th, 1880.

† Read before the Sanitary Convention at Detroit, Jan. 7, 1880.

vening soil are considered as sufficient to prevent the contamination of the water from these receptacles of decomposing matter. There is a general belief in the power of the soil to retain or to remove in some way all organic matter from solutions. Not infrequently a privy-vault may be seen located within ten or twenty feet of a well or cistern, and often the slope of the land is toward the well or cistern. During the past three months the authorities of a growing village in the interior of this State have, in spite of the remonstrance of certain citizens, located a cemetery within a few rods of a deep well, the water of which is used for household purposes.

During the summer of 1878, the sanitary condition of certain premises in Ann Arbor was as follows: The cistern, located at the rear of the house was about twenty feet deep, and about six feet below the surface it leaked. Of course if water could pass out, it could as readily pass in. Fifteen feet back in the yard, and slightly elevated, stood the privy. As soon as the warm months of summer came on, the water of the cistern became so offensive that it could not be used. The odor was that of the privy, and the water swarmed with microscopic animalculæ, and with others large enough to be seen with the unaided eye. All the water was removed and the cistern thoroughly cleansed. A few days later a heavy rain refilled the cistern, but within a few weeks more the water again became unfit for use, but was not so bad as it had been before the cleaning. During the remainder of the summer and fall the family obtained their drinking water from another source. During the winter season the water of the cistern so improved that after being filtered it could be used. But as soon as the warm weather of the following summer approached, the water again became unfit for use and was almost or quite as bad as it had been during the previous summer. This is only an illustrative case, and I know of similar ones in Ann Arbor.

Such instances as this caused us to doubt the power of soils of completely preventing the filtration of organic matter in solution. We determined to endeavor to answer, by experimental investigation, the following questions: (1.) To what extent are organic



substances removed from solution by filtration through soil? (2.) Do different soils differ in their capability of thus removing organic matter? It must be noted here that the organic substances to be removed are held in solution, and not merely in suspension. The principal object in the filtration of natural waters for the supply of towns and cities is the removal of suspended matter. Again, the waters with which our experiments are concerned, and with which, as we shall endeavor to prove, drinking water is often contaminated, should be designated as *polluted water*, *i. e.*, the amount of injurious substances which they contain is sufficiently great to render their direct use dangerous.

The first thing necessary to an investigation of the first question, was to select some soluble organic substance, for which there are known exact methods of quantitative determination; for it would be necessary to determine the amount removed from solution by making quantitative determinations of the amounts in solution before and after filtration. For this purpose urea was selected, and, in order to have the conditions as natural as possible, the solution selected for filtration was urine. Urea is also easily decomposed, and experiments performed with this substance would have the advantage of the conditions being most favorable for the removal of the organic substance. It is well-known that urea is not far removed from inorganic matter and that its transformation into carbonic acid and ammonium is easily accomplished.

One cubic foot of the ordinary gravel soil, from four feet below the surface, was obtained and so arranged that fluids could be poured upon its surface (which was one foot square) and the filtrate collected. The amount of urea in a specimen of urine was then estimated with mercuric nitrate (the chlorides having previously been removed), a measured quantity of this specimen was poured upon the surface of the soil, and the urine which passed through was collected, measured and its contained urea estimated. A certain amount of urine (which was equal to that passed by one person in twenty-four hours) was poured upon the soil at one time. The filtrate from this was collected, measured and its contained urea estimated. This was repeated for a number of days or until the filtrate was found to contain as much

urea per c. c., as the urine did before filtration. The results of these experiments are given in the following table:

	Urea Poured on Soil.	Urine Passed Through	Total Urea Poured on in Solution.	Total Urea in the Filtrate.	Urea per 100 c. c. before Filtration.	Urea per 100 c. c. after Filtration.
			Grams.	Grams.	Grams.	Grams.
First Day...	1,760 c. c.	938 c. c.	49.28	15.00	3.8	1.6
Second Day..	965 c. c.	740 c. c.	25.7	14.06	2.6	1.9
Third Day ..	860 c. c.	600 c. c.	13.76	9.60	1.6	1.6
	3,585 c. c.	2,278 c. c.	88.13	38.66		

The soil, which had now become saturated with organic matter, was removed from the filter, spread out upon a clean board so as to be exposed to the air, left in this condition for twenty-four hours, and then returned to the filter. Urine was poured upon this soil, and the amount of urea removed by filtration was estimated as before. In this case it was found that the urine, before filtration, contained 2.1 grams of urea per 100 c. c., and after filtration, only 1.6 grams; or the soil which had been saturated with the organic matter was so far purified by exposure to the atmosphere for twenty-four hours that it now removed one half a gram of urea from every 2.1 grams poured upon it in solution.

From these experiments it is very evident that the ordinary gravel, which constitutes so large a proportion of the soil of this State, has but little effect in removing or oxidizing soluble nitrogenous substances from solutions which are allowed to pass through such soils. Furthermore, it became evident that such soil soon becomes saturated, and then no longer has any effect upon the removal or oxidation of these organic substances. The amount of urea necessary to thus saturate one cubic foot of soil was 88.13 grams, or that contained in 3,585 c. c. of urine. Of course this urine contained a small quantity of other organic substances, so we shall not claim that the following computations are exact; but we will be careful not to overstate them. Suppose that the total solid excretions of an adult are 112 grams per day (this of course is very low), then the solid excretions from a family of six persons each day would be sufficient, when

properly dissolved, to saturate over seven cubic feet of gravel soil. From this it is evident that only a few weeks or months would suffice, with a proper amount of rain fall, to saturate every cubic foot of soil to the depth of five or ten feet in a small yard, in which we often find privy vault, cess-pool and cistern or well in close proximity. Of course if these substances are not destroyed by filtration, they will be carried with the water which passes through the soil wherever such water may go. If the water gains an entrance to the well it will carry with it the substances in solution. At this rate it would require more than a few feet or even rods of intervening soil to prevent the contamination of the water of wells or leaky cisterns from privy vaults, which often are not cleaned once a year, or from cess-pools or cemeteries.

But there is another consideration that must be mentioned in this connection. The gravel by itself forms one of the poorest of filters, because the particles are not all of the same size and shape, consequently the interspaces are also of unequal size, and the liquid, meeting with less resistance in one direction than in others, soon collects and forms streamlets which may convey the polluted water in quantity toward, or even into the source of the water used for household purposes.

This brings us to a consideration of the second question proposed to be investigated by experimental investigation, i. e., Do different soils differ in their capability of removing organic matter from solution? The gravel having been already tried we did not make any further experiments with it; but we next experimented with sand and loam in the same manner as we had done with the gravel. The comparative results only will be of interest. While urine (3,585 c. c.) containing 88.13 grams of urea, saturated one cubic foot of gravel, urine (4,000 c. c.) containing 89 grams of urea did not saturate one cubic foot of loam, but after this amount of urine had been used, the loam still removed four-tenths of a gram of urea from each 100 c. c. of urine. The sand was also better than the gravel but was not as good as the loam, for 88 grams of urea in 4,000 c. c. of urine did not saturate the sand, which still removed two-tenths of a gram of urea from each 100 c. c. of urine. Thus of the three—gravel, sand

and loam—the loam is most active, and the gravel least active in the removal of organic matter from solution.

The explanation of this may be conceived to be as follows: First, the inequality in size and variety in the shape of the pieces of gravel (as has already been referred to) allows the formation of streamlets, and the solution thus passes through the gravel more rapidly than through either the sand or loam. This is a physical defect in the gravel as an agent for the removal of the organic matter. A second cause is the greater porosity of the loam. As was shown by the renewed activity of the gravel after it had been exposed to the atmosphere for twenty-four hours, oxygen is the agent which acts chemically in the destruction of organic matter, or, rather, in its conversion into inorganic matter. Now the more concentrated the oxygen the more energetically will it act. As is well known, the atmosphere in the minute pores of the soil is condensed.

Oxygen has justly been termed the scavenger of creation, and the free access of this gas is necessary in order to render the excretions of animals harmless. This good work is begun in the living body; for the hæmoglobine of the red blood corpuscles carries oxygen to all the tissues, and by the action of this oxygen, poisons introduced from without and poisons generated within the organism are rendered inert and fitted for excretion.

Animals are formed by the agency of plants out of the constituents of earth and air. "Whatever in our bodies is inorganic originated in the soil; whatever in our bodies is organic originated in the atmosphere. Whatever in our bodies is inorganic will return to the soil; whatever in our bodies is organic will return to the atmosphere. The carbon of the carbonic acid of the air becomes the carbon of the cellulose, starch, gums, resins, etc., of plants; it becomes the carbon of our blood and muscle; and from our bodies it is returned to the air. Thus the changes of matter form an endless chain whose first link is also its last." (Gorup-Besanez.) Now the agent which converts the organic tissues of the animal into inorganic substances is oxygen; and this is the proper agent to use in rendering animal excretions harmless. This is the reason why the dry earth closet, with a pipe to conduct the gases into a chimney,

is the best method (at least for the rural districts and small cities and villages) of disposing of fæcal matter. The dry earth takes up the oxygen, which is then condensed in the pores and acts with double energy. Instead of burying these substances down in the earth where but a limited supply of oxygen can reach them, it is far better to allow the free access of the atmosphere. Burial simply aids in the preservation of organic substances, and, as we have seen, they may be carried under the ground into our wells and thus poison us. Instead of simply burying these noxious substances and then thinking ourselves secure from them, it would be far better to render them inert and even useful, as may be done.

As to the location of cemeteries in the vicinity of wells, we think that our experiments show that the decomposing matter from one body would be sufficient to pass a long distance, especially through gravel soil, before it would be completely destroyed. We honor the dead as highly as others do, but it is not right that the dead should be allowed to murder the living.—*From the Sanitarian.*

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PYROGALLIC ACID IN PHAGEDENIC CHANCRE.—Vidal. (*Journ. de Méd.*, Feb., 1880, p. 68.)

The author has found a new use for pyrogallic acid, which he uses a good deal in treatment of skin diseases; that is, in the treatment of phagedenic chancres. In two cases the result was almost immediate. In the first case there was phagedenic chancre of rapid march, accompanied by a suppurating bubo, also phagedenic. The chancre was dressed with an ointment of pyrogallic acid and the bubo was touched only with the same; in a few days the ulceration was arrested. The second case was a chancre from inoculation and had become phagedenic, the size of a five franc piece. The same result was obtained in three days and cicatrization began. The ointment employed was at first 10 per cent., then 20 per cent. The strength should vary according to circumstances and the sensitiveness of the patient.

## Summary.

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*Collaborators :*

DR. L. W. CASE,

DR. R. TILLEY.

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### PRACTICAL MEDICINE.

DEFORMITIES OF THE VULVA PRODUCED BY DEFLORATION, MASTURBATION, SAPHISM AND PROSTITUTION.—Dr. Martineau. (*Le Praticien and Gazette Obstét.*, March 20, 1880, p. 87.)

Dr. Martineau has recently given a series of lectures at the Lourcine hospital, on this subject, too little known by physicians, and generally excluded from didactic works; we extract a few passages.

The external genital organs of women, as the result of their functions, of vicious habits, or of pathological lesions, undergo modifications in their aspect, and suffer deformities, which put the practitioner in the way of determining the lesions which affect them, and are to him the source of numerous indications. These deformities may be seen in young girls, in married women, as well as in prostitutes addicted to the most abject practices.

Before entering upon a description of vulvar deformities, Dr. Martineau describes the anatomy and normal aspect of the genital parts in the little girl, the girl at puberty, the married woman, etc. In the little girl the vulva is vertical, and its opening looks directly forward. It is partly open at the upper portion, and separation of the labia majora allows a view of the clitoris, which appears prominent, and the orifice of the meatus urinarius; it is closed, on the contrary, at its lower portion. An opposite condition is seen in girls at puberty; a disposition still



more appreciable in women after the first sexual relations. The vulva is directed obliquely from above downwards, and from before backwards. The separation of the labia majora is slight above, and finally disappears completely, so that the clitoris and meatus are totally concealed; on the contrary, the vulva is partly open at its inferior portion. The amount of hair seems to be in proportion to the complete development of the internal genital organs. The hairs are sometimes rare and disseminated in women in whom the uterus has not acquired its normal development, and who are in consequence sterile. (The importance given to this sign by the Jewish law to determine the nubile age of women is well known. According to the precepts of the Talmud, the woman shall have at least two hairs upon the vulva to be reputed nubile.)

Deformities of the vulva are the result of *violent defloration* or of divers vicious habits: *masturbation* and *saphism*, or of *prostitution*.

The deformities seen after violent defloration are all the more characteristic in that they are produced in younger subjects. They are principally seen in girls from 6 to 15 years of age. According to Tardieu and Toulmonche, fifty-nine times the deformities existed in girls under 11 years; thirty-two times from 11 to 15; four times from 15 to 20; once in a maiden of 41 years. At Lourcine I find every day that these deformities may be produced at any age, and that they are as characteristic in adult women as in little girls. Sometimes they are the result of a disproportion of the genital organs, which renders the intromission of the male member difficult and impossible. Sometimes they result from imperforate vagina, from the presence of vertical bridles, from a vicious disposition of the pelvis or inferior limbs. Finally, I might mention the height of the perineum, by virtue of which, in certain women, the fourchette seems to be carried toward the pubis.

These deformities consist, in the girl, in a premature development of the sexual parts, a precocious nubility, and especially the formation, at the expense of the vulvar canal, of a sort of infundibulum, more or less wide and deep, capable of receiving the extremity of the penis, and very analogous to that which has

been indicated at the anus as characteristic of pederasty. When this infundibulum exists, the physician, in practicing the vaginal touch, has the sensation of a veritable sexual canal, preceding the true vaginal canal. The hymen is generally ruptured, but at times, however, it is found at the bottom of the infundibulum, still preserving its semilunar form, and slightly lacerated on one of its borders. Such are the typical characters of deformity of the external genital organs produced by incessant and *sometimes unfruitful* efforts of the defloration.

Deformities produced by the three other causes are met with in two-thirds of the women who frequent the *Lourcine*. The vulvar deformities due to masturbation are not the appanage of women of gallantry; they are encountered in all classes of society. This practice also gives rise to various troubles in the organism, bearing upon the nervous system and upon nutrition. It plays, moreover, in the pathogeny of uterine affections, a rôle which should not be disregarded; to it a good many cases of constitutional metritis owe their existence. Moreover, masturbation retards their termination, and is a frequent cause of relapses and recurrences. Masturbation, in women, is the ordinary result of a slight friction of the clitoris with the finger, with the penis, or with the tongue. In the latter case it has received a particular name—saphism or tribadism. Sometimes, also, it is produced by the rubbing together of the thighs, strongly pressed one upon the other.

The deformations are sustained by the clitoris and the labia minora. They consist especially in modifications of structure resulting from the habitual congestion of which these organs become the seat. On the clitoris they affect the sheath and glans clitoris; the clitoris takes on an exaggerated development; its length, an average of (1.1 inch) 3 centimeters, may become doubled. Parent-Duchatel, in his work on "*Prostitutes in Paris*," mentions three prostitutes in whom the clitoris had a remarkable development; in one of them it had a length of about (3 inches) 8 centimeters, and in volume it equaled the index-finger. At the same time, the glans clitoris is swollen, red, violaceous; it extends beyond the sheath—sometimes is entirely precident. The sheath is loose, long, wrinkled, forming a series

of folds ; its anterior extremity is detached from the glans clitoris, and leaves it uncovered.

The labia minora are elongated, more voluminous, lax, pendant, triangular ; their rose color has disappeared, and they have become brown, grey, or slate-color ; at the same time there is seen upon their internal face small yellow prominent points ; the sphincter of the bladder may be dilated to such a degree as to produce incontinence of the urine, and I am inclined to believe that a good many cases of incontinence of the urine in girls, and even in women, have for their cause masturbation.

When masturbation is produced by friction of the thighs against each other when crossed, certain peculiarities are observed ; the sheath is relatively but little developed, compared with the volume which the glans attains ; on the contrary, the latter is hard, voluminous, prominent, and has a club-shaped extremity. The labia minora are also less developed than in other cases.

It would be interesting to know if the third manner of masturbation—saphism or tribadism—produced upon the vulva as characteristic deformations as the preceding. This unnatural practice is nowadays one of the most frequent in all classes of society, as well among married women as in prostitutes.

Saphism is very much in honor among the patients who frequent the Lourcine hospital, but it is difficult to determine exactly its characters, for it is always combined with handling. In order to make this study complete and satisfactory, it would be necessary to observe women united in some numbers, such as those who live in Oriental harems ; it is indeed known that saphism is very frequent among these women. However it may be, in women I have examined, who have admitted this practice, it appeared to me that the border of the sheath, while detached from the glans clitoris, as in handling, was more voluminous and more hypertrophied than the rest of the organ. The glans clitoris may be also more developed, more prominent ; its club-shape, as in the second mode of masturbation, would be in accord with the act of saphism, in which there is not only friction, but also suction of the extremity of the clitoris.

The sad effects of these practices should be combatted with all the resources of therapeutics. I do not believe it necessary to

practice cauterization or ablation of the clitoris. We should endeavor to remove the cause which induces patients sometimes to masturbate. Thus, in little girls, the vulvar inflammation should be treated; in young girls, the oxyuris vermicularis; in married women, metritis and pruritus vulvæ must be treated, at the same time that the nervous system is acted upon by giving bromide of potassium.

Does prostitution give rise to deformations of the external genital organs? Authors have different opinions in regard to this. I cannot accept the opinion of M. Charpy, who thinks that the prostitute undergoes in her genital organs a series of deformations which depend upon the abuse which atrophies and the irritation which hypertrophies. All I can say is, that it appears to me that there exists a peculiar aspect of the genital organs in women, whether prostitutes or not, who abuse coitus.

Thus, in a young girl aged eighteen, deflorated since six months only, and who had never had an abortion and was not pregnant, I found the labia majora enormous, lax, wrinkled, pendant, bluish; the labia minora were normal, clitoris not developed, and the vulva open. She had metritis, had not had syphilis, and was not addicted to masturbation or saphism.

Struck with this aspect, which resembled rather the genital organs of a woman of forty who had had children, than those of a girl of eighteen, I interrogated her upon her manner of living, and she admitted that for six months she had not passed a single day without three or four sexual connections. These deformities have, then, a value which I cannot disregard, but they do not characterize prostitution; they may be lacking in the most active prostitutes; while in a young girl they indicate excessive abuse of coitus.

LOCAL MORBID TEMPERATURES IN AFFECTIONS OF THE ABDOMEN.—(*Bulletin de l'Académie de Médecine*, Dec. 9, 1879. By Monsieur Peter.

M. Peter, who has been studying local morbid temperatures for many years, having published articles on that subject as early as 1864, has lately detailed before the French Academy of Medicine four well marked cases of differential diagnosis between

ascites and other affections of the abdomen, the diagnosis having been substantiated by post-mortem examinations. The following is a brief summary of those cases. (We would state that M. Peter uses by preference the ordinary thermometer, although he is acquainted with the various supposed improvements involving great cost.)

CASE I.—*Chronic peritonitis distinguished from ascites by elevation of abdominal temperature.* Patient, male, thirty-five years, entered hospital March 25th, affected with abdominal effusion. Had been tapped a few days previous, and seven liters of clean yellow serum withdrawn. He was thin and extremely feeble; skin, dry and sallow (*terreuse*). Tumefaction of bowels quite marked, the subcutaneous veins slightly enlarged. The liquid moved about easily and palpation produced pain. The liver appeared small from percussion. The tongue was coated, no appetite, with a decided dislike to meat, never any vomiting, no hematemesis.

The disease was of about eight months duration. In consequence of this comparatively rapid development of digestive difficulty the question arose as to whether it arose from an ascites, from cirrhosis of the liver, chronic peritonitis, from chronic gastritis, or cancer of the stomach.

Temperature, March 29th, in axilla,  $36.5^{\circ}$  over the right hypochondrial region  $36.1^{\circ}$  (the normal temperature for this region is  $35.5^{\circ}$ ). That is, in the axilla there was a diminution of temperature of  $0.5^{\circ}$ ; whilst in the abdominal region there was an elevation of  $0.8^{\circ}$  above normal, but when compared with the temperature of the axilla, really an elevation of  $0.8^{\circ} + 0.5^{\circ}$  or  $1.3^{\circ}$ . From this elevation M. Peter diagnosticated the difficulty to be not simple ascites, but chronic peritonitis, possibly carcinomatous.

In the early part of April the patient weakened considerably, ate only a few mouthfuls of beef-tea and milk, and that with nausea; he became exceedingly emaciated and the effusion diminished. Temperature on the 11th of April, axilla  $36.6^{\circ}$ , right hypochondria  $36.7^{\circ}$ . Died April 25th.

Autopsy revealed: liver small and hard, but not so small as was expected, weight 1250 grams. The stomach was remark-

able in apperance; it was small and abounded in ridges (*ridé*) and completely hidden under the liver. It was somewhat cylindrical in form, bulging out in the middle, and attached to the lower part was an irregular mass about the size of the thumb, of a violet red color, fibroid in character. This was the great omentum, retracted and binding the lower border of the stomach to the transverse colon; the small omentum bound in a similar way the stomach to the liver, and appeared to be equally thick and hard. The peritoneum of the whole region was also chronically inflamed.

The walls of the stomach were at least four times the normal thickness. An histological examination revealed a decided gastric sclerosis.

The ascites then did not arise from cirrhosis of the liver, but from chronic peritonitis, and the local elevation of temperature arose from the inflammation, and not from the ascites.

CASE II. *Chronic peritonitis of tubercular origin, distinguished from ascites by local temperature.* A woman, 33 years, entered the hospital April 4, 1877, with an extensive peritoneal effusion. The diagnosis accompanying her was, "Ascites from cirrhosis of the liver." M. Peter's diagnosis, however, was chronic peritonitis, probably of tubercular origin, without any affection of the liver. The diagnosis was based on the abdominal pain which was present at the commencement of the difficulty, associated with diarrhoea. The thermometer in the abdominal regions gave

April	8th,	36.7°,	1.2°	above	normal.
"	9th,	36.8°,	1.3°	"	"
"	10th,	37.4°,	1.9°	"	"
"	11th,	36.3°,	0.8°	"	"
"	12th,	36.5°,	1.0°	"	"
"	13th,	35.5°,		normal.	

The 14th, the patient died. The most remarkable feature about the temperature was that on the 12th the axilla gave only 34.5°, and on the 13th, 34.6°. That is, the temperature in the axilla had declined 2° from normal, whilst the temperature of the affected part was one degree higher than normal.



CASE III. *Cancerous peritonitis distinguished from ascites by local elevation of temperature.* Male patient entered hospital June 17 with an accompanying diagnosis of ascites from cirrhosis of liver. The liver appeared small and the spleen large. Gave a history of having vomited blood a year previous, and of having been treated for a difficulty of the stomach. From the time of entering the hospital up to the 20th of June the temperature remained, about axilla,  $37^{\circ}$ , normal. The effusion increased to such an extent that tapping became necessary, and with the increased effusion came an elevation of temperature, axilla,  $38^{\circ}$ ; abdominal region,  $37.8^{\circ}$ , or  $2.3^{\circ}$  above normal.

July 6th,	temperature in axilla,	$38.3^{\circ}$ .
" 6th,	" abdominal region,	$38.2^{\circ}$ .
" 8th,	" axilla,	$37.8^{\circ}$ .
" 8th,	" abdominal region,	$37.5^{\circ}$ .

Just  $2^{\circ}$  above the temperature for that region.

The patient died August 5th. Autopsy revealed a stomach greatly distended with a cancerous development at the pyloric extremity. The walls near the pylorus were extremely thick. Numerous other pathological changes were present, but our object is simply to show the relation of the elevation of temperature to the cancerous development, as distinct from ascites.

CASE IV. *Chronic peritonitis distinguished from "nervous tympanitis" by local elevation of temperature.* A man of 48 years was presented to M. Peter by a physician of distinction as being the subject of nervous tympanitis. The abdomen was unusually distended, but presented no signs of fluctuation. M. Peter's diagnosis was chronic tubercular peritonitis. The temperature was as follows, taken at different times :

In axilla,	$36.9^{\circ}$ ,	over abdomen,	$36.6^{\circ}$ .
"	$36.7^{\circ}$ ,	"	$37.1^{\circ}$ .

These cases were taken by M. Peter from among a number which he has collected and intends to publish at large. His conclusions are that the simple ascites *never elevates the temperature of the region*; whilst chronic peritonitis *always elevates the temperature*.

A SIMPLE METHOD OF CURE FOR OZENA.—(*Gazetta Medica Italiana*, No. 5, 1880, p. 40.)

Dr. Gottestein considers ozena as a constant symptom of chronic coryza. He has no doubt that in consequence of the destruction of the glands, there is produced a diminution and an alteration of the nasal secretion, which, drying rapidly, remains adherent to the mucous membrane in the form of crusts and undergoes a decomposition which produces the fetor. A limited atrophy of the mucous membrane is sufficient to give origin to the ozena. Adopting this view of ozena, it will be understood that there can be no question of a radical cure, since we cannot hope to establish the normal secretion in an atrophied membrane. We must then seek for a symptomatic cure which should be most simple and least inconvenient for the sufferer.

The author was led to this plan accidentally, while experimenting to see if ozena might be the result of an abnormal dilatation of the nasal fossæ, caused by atrophy of the inferior septa, causing, in consequence, a slowing of the current of inspired air which is not sufficiently strong to favor the expulsion of the nasal secretions. The method by which the author has been able to obtain perfect results in the space of three months in fifteen cases, of ozena is as follows:

He commences with a nasal douche, which removes the secretions from the nasal fossæ and allows him to recognize the state of the mucous membrane and the extent of its lesions. He then introduces into the diseased cavity, a tampon of cotton three to five centimeters in length, which should remain in place for the space of twenty-four hours.

An hour and a half or two hours after its application, patients notice that the nose becomes a little moist. If the tampon be then withdrawn, the mucous membrane is seen to be moist, without crusts or bad odor. An interval of twenty-four hours may elapse between two applications of the tampon. If both nasal fossæ are diseased, the tampon may be used alternately every twenty-four hours. The tampons probably restrict artificially the cavity, which increases the action of the column of inspired air, thus facilitating the expulsion of the secretions; and absorbing continually the matter excreted, prevent its drying up.

**PRECOCITY.**—M. G. Delaunay, in an interesting paper read before the Société de Biologie on December 27th, records his opinion that precocity is a sign of biological inferiority. As a proof of this, the author adduced the fact that the lower species developed more rapidly and were at the same time more precocious than those higher in the scale. Man is of all animals the longest in arriving at maturity, for his brain may increase up to fifty years of age. The lower races of men are more precocious than the higher, as is seen in the children of the Esquimaux, Negroes, Cochin Chinese, Japanese, Arabs, etc., who are, up to a certain age, more vigorous and more intellectual than small Europeans. Precociousness becomes less and less in proportion to the advance made by any race in civilization. Thus the French people grow less and less rapidly, and to such an extent is this the case, that the standard for recruits has been twice lowered since the beginning of the century; and the same observation applies with equal force to the Italians. In French society the nobles had, according to Broca, in olden times more capacious heads than the rest of the people; but M. Le Bon now shows that their skulls are at present inferior in capacity to those of scientific men and merchants. Women are more precocious than men, and in all domestic animals the female is formed sooner than the male. From eight to twelve years of age, a girl gains one pound a year on a boy, and in mixed schools they obtain the first places up to the age of twelve. The inferior tissues and organs develop before the higher ones, thus the brain is the slowest of all organs to develop. The anterior and the left superior portion, of the brain, which are the seat of the higher faculties, develop at a later period than the other parts. M. Delaunay concludes by stating that the precocity of organisms and organs is in inverse ratio to the extent of their evolution.—*Le Progrès Médical*, Jan. 3, 1880.

**EXPERIMENTAL STUDY ON THE TREATMENT OF HEPATIC COLIC.**—M. Laborde. (*Revue Méd.* Feb. 7, 1880, p. 184.)

The following is the author's *résumé* of the results obtained by his physiological experiments concerning hepatic colic:

(1.) The excretory bile canals are endowed with contractile power, and may consequently enter into a spasmodic state under

the influence of direct or indirect stimulation; this contractility is of the nature of that of the smooth, muscular fibers of organic life, and the existence of these fibers in the walls of the canals is demonstrated by histological anatomy, perfectly in accord here with experimental physiology. (2.) The mucous membrane of these canals is exceedingly sensitive, and shown under the action of excitants more or less intense by pain and by reflex phenomena, of which the immediate manifestation is spasm of the canals. (3.) These phenomena are particularly determined by the presence and contact of foreign bodies (biliary calculi), whose spontaneous migration is thus rendered very difficult and is only accomplished after a greater or less length of time, with the peculiarity that these bodies are carried towards and into the gall-bladder. (4.) Anæsthetic and anti-spasmodic medicines are the most appropriate in the treatment of this morbid state, of which it is easy to realize experimentally the mechanical conditions. (5.) These medicines, notably morphine, chloroform and hydrate of chloral, act by exercising at once an anæsthetic and a paralyzing influence, from which results the cessation of the spasmodic state, the distension of the canals and the accumulation of bile, which acts upon the foreign body as a *vis a tergo* and pushes it toward the intestine. (6.) The combination of chlorhydrate of morphia with chloroform or with hydrate of chloral, that is, the simultaneous administration of these medicines, is the most powerful means of obtaining the desired results, namely: insensibility of the biliary canals, prevention of pain and the favorable influence upon the migration and rapid extrusion of the foreign bodies.

OBSERVATIONS ON THE DIGESTION OF MILK.—Dr. Brush divides milk into two distinct classes, according as it is the product of ruminant or non-ruminant animals. The milk of ruminants contains a variety of casein which coagulates into a hard mass under the action of the digestive ferment, or during lactic fermentation. From this fact the cause of the difficulty experienced by the human stomach in digesting the milk of ruminating animals is readily accounted for. The other variety of milk, viz., that afforded by the non-ruminant animals, does not, under

the action of rennet or acid, coagulate into the hard mass which is found in the cow's milk, but forms small granular or flocculent masses which are easily diffusible. This observation explains simply the advantages of koumyss prepared from cow's milk, over the milk itself, in the artificial feeding of children. In koumyss the casein is coagulated, and afterwards subdivided; it is then incapable of further coagulation under the action of any acid or ferment. It is also found that the amount of casein in milk is always in inverse proportion to the amount of sugar present, and the milk of ruminants contains a smaller amount of sugar, but a larger amount of casein than that of the non-ruminants. The less sugar too that a given variety of milk contains the more rapidly does lactic fermentation take place, and consequent putrefaction follow. A milk containing a large amount of sugar, however, will undergo alcoholic fermentation, when placed under those conditions which would be the most favorable for lactic fermentation in a milk containing a small amount of sugar. The bearing of this observation is that putrefaction follows lactic fermentation, whereas alcoholic fermentation precludes to a certain extent any form of putrefaction. Thence the value of koumyss in the artificial feeding of children, for the sugar which it contains is all changed into alcohol and its associates, which at this period of life, when properly administered, is a true food.—*New York Medical Journal*, Sept., 1879.

CURE OF NASO-PHARYNGEAL POLYPI BY INTERSTITIAL INJECTIONS OF CHLORIDE OF ZINC.—(*Archivio Clinico Italiano*, No. 1, 1880, p. 8.)

Dr. Rochard reported to the *Soc. de Chirurg.* of Paris for Dr. Barthélemy of Toulon, a case of naso-pharyngeal polypus treated successfully with injections of chloride of zinc. The patient was a boy of fourteen years who entered the hospital at Toulon in a state of considerable anemia from abundant nasal hæmorrhages. The polypus had completely destroyed the sense of smell.

Dr. B. proposed several times a radical operation, but the boy refused. He then thought of injecting into the tumor chloride of zinc. As a preliminary, he perforated the palatine arch and took away the most salient portion of the tumor.

The following day he made the first injection of five drops of liquid chloride of zinc. The injections were renewed eight times in the space of four months; at the end of which time the patient was considerably improved and the tumor was almost entirely destroyed. Nevertheless, after some months, a slight relapse was observed in the superior maxilla.

Theophile Anger has twice employed in such cases, with relative success, injections of perchloride of iron, which he believes preferable to chloride of zinc.

**TREATMENT OF URÆMIA BY INJECTIONS OF PILOCARPIN.**—M. Leven read before the Biological Society of Paris, at its meeting on the 12th of October, an account of a girl, aged 16, who suffered from albuminuria, and who was suddenly seized with convulsions accompanied by complete anuria. Hydrochlorate of pilocarpin was injected subcutaneously, the third injection alone appearing to have any effect. The patient, who had previously been comatose, was then capable of being roused, and she perspired freely, whilst saliva was profusely excreted. The convulsions entirely ceased after the fourth injection, and the patient was cured. During the whole time of the uræmic symptoms the temperature oscillated between 37° and 38° C., whilst the saliva contained nearly ten per cent. of albumen. (*Le Progrès Médical*, 25th October, 1879).—*The Practitioner*, February, 1880.

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#### SURGERY.

**ABLATION OF A GOITRE; CURE IN SIX DAYS.**—Dr. A. Reverdin, Geneva. (*Journal de Médecine*, March, 1880, p. 119.)

Occasions for extirpating goitres are rarely met with. Still, this difficult and dangerous operation has its partisans nowadays. It still remains a difficult operation, but its dangers are very greatly diminished by the rapidity of the phenomena of reparation by the present methods. On this account our readers will be interested by the following case of Dr. Reverdin, of Geneva.

Mlle. X., 33 years of age, of good constitution, presented herself to me for the cure of a goitre which she had carried for



several years, and which had resisted all medical treatment. I found in the thyroid region an irregular tumor, very hard in certain points, soft and elastic in others; it was more developed to the right than to the left, and had notably displaced the larynx and trachea toward the right side. Its volume was that of a medium-sized apple.

The patient asked if an operation was possible. Possible, yes; but not absolutely indicated, if the danger attendant upon it was considered. The patient then, without hesitation, asked that the operation should be tried, and fixed the day herself. The operation was performed December 13. It had been agreed upon with the patient that chloroform should not be used. Everything was prepared to use Lister's method in the strictest manner.

The patient lay on her back; a round pillow placed under the neck; then, having rendered the part insensible with the ether spray an incision ( $4\frac{1}{2}$  inches) 12 centimeters in length was made in the median line; with grooved director and bistoury, the tumor was gradually approached; arriving upon it, the difficulties commenced, large vessels, arteries and veins forming a veritable network in which one could only advance very slowly and prudently. Ligatures were difficult; the number of clamps used (25) twice proved insufficient, and vessels had to be tied to liberate them, and allow the operation to continue. The efforts were directed to the right; the finger passed toward the inferior part of the tumor was unable to lift it up. It was finally accomplished with great difficulty, and by the use of many ligatures. The second part of the operation was facilitated by the laxness of the tissue situated under the tumor; however, towards the upper part, many more ligatures had to be employed. More than eighty ligatures were used, the catgut being excellent, and never breaking. The tumor was entirely extirpated. After a careful cleansing, and repeated with the strong solution, a caoutchouc drainage tube, the size of the finger, and ( $2\frac{1}{2}$  inches) 7 or 8 centimeters long, was placed in lower angle of the wound, that is, behind the sternal notch; ten sutures of catgut closed exactly the rest of the wound. A large compress covered the neck as far back as the ears, and to the shoulders and chest. Muslin bandages kept it in place, and formed a sort of cuirass, preventing

any movement. The operation, including the dressing, lasted two hours and a half. The patient had admirable patience and courage, which singularly facilitated the surgeon's task. A little difficulty in swallowing, and a little smarting of the wound, were the only pains of which the patient complained the first two days. The dressing was renewed the day after; the wound looked well. The third day the drainage tube was removed; a large blood-clot entirely filled the opening, and was left undisturbed; no injection was made, the dressing simply being renewed. The patient swallowed better, especially food somewhat solid. The sixth day the dressing was removed, reunion being perfect; there was absolutely no discharge from within; the clot was organized, and a large granulation alone marked the place occupied by the drainage tube for three days. Some strips of diachylon were placed for safety over the region.

In six days, then, this cavity, in which remained a considerable number of ligatures, with a canal kept open for three days by a large drainage tube, was absolutely obliterated. There was never the slightest swelling; never pain, except slight difficulty in deglutition; a temperature and pulse nearly always normal, the highest point being  $38.3^{\circ}$  C. ( $100.9^{\circ}$  F.), pulse 96, the second day, in the evening; save on this day, the temperature was never up to  $38^{\circ}$  C. ( $100.4^{\circ}$  F.).

As a final result, there remains only a small, red, thread-like line, with dots to right and left at the point of sutures. The author has no comments to make upon the case, except to say that it was difficult, and in spite of excellent assistance, lasted two hours and a half, and that without Lister's method a similar result could not have been hoped for.

THE PORRO OPERATION.—(*Bulletin de l'Académie de Médecine*, No. 10, 1880.)

M. J. Lucas-Championnière presented two women to the Academy who had had successful Porro operations performed upon them. M. Lucas-Championnière has operated four times, with successful results to the mother in two, and four living children. These four cases of extremely narrow pelvis have presented themselves within two months. All the women had

rachitic pelves, with a conjugate diameter of (about  $2\frac{1}{2}$  inches) about 6 centimeters or less.

The first, Eliza A., aged twenty-seven, primipara, entered the Maternity on October 27, 1879, presenting a type of rachitism; her height was (49 inches) 1.25 meters. A first measurement of the pelvis gave a sacro-sub-pubic diameter of (3 inches) 0.078 m. A second measurement gave 0.073 m. M. Lucas-Championnière kept the woman under surveillance at the maternity during the last three weeks of her pregnancy; he had her examined by M. Tarnier, who approved of his project of intervention, being very much in favor of the Porro operation. On the morning of the 19th, labor began, without rupture of the bag of waters. Slight sanguineous discharge; disappearance of the neck. The operation was decided upon for the afternoon. At half-past three, all the precautions being taken, the operation was commenced. A large incision in the median line of (about 6 inches) 15 or 16 centimeters, passing a little above the umbilicus. On incision of the uterus, a frightful flow of blood occurred. The section finished, a living female, weighing (5 lbs.) 2 kil. 700 grams, was extracted by the feet, then the placenta, and with forceps the uterus was drawn forwards and two pins passed through the inferior segment; beneath, an iron wire; between the two, a second wire, which were tightened with Cintral's ligator. The uterus and ovaries were then removed. Six deep and one superficial sutures of the abdominal walls; per-chloride of iron applied to the stump, and complete Lister dressing. Duration of operation, three-quarters of an hour. The temperature never rose above  $38.9^{\circ}$  C.—that was the evening of the 21st. The sutures were removed successively until the 23th, and then the pins. The pedicle came away the thirteenth day. Dec. 20th, complete cicatrization. About six weeks after the operation, the patient got up completely cured. She presents to-day a perfect state of the abdomen, with a slight excavation. The touch reveals a large and mobile cervix. She has even had sexual connection already, without accident, the 10th of February. The child of this woman having been taken to the church for baptism the third day, after having been very lively, was chilled in the severe cold, became sick and died in thirteen days.

The second patient, Adele I., entered the Necker hospital on December 30. She was twenty-three years of age, and also rachitic; height, (50 inches) 1.30 m.; sacro-sub-pubic diameter, 0.067 m.—that is, a sacro pubic diameter of (2 inches) 5 centimeters. She had been in labor thirty-six hours, and the waters had been escaping for twenty-four hours. M. Lucas-Championnière operated December 30th, at 9 p. m., after having given chloroform for several hours, to calm an insupportable agitation. At this time the patient was in full labor, with a dilatation the size of the palm of the hand. An incision 16 centimeters long was made in the abdominal wall, commencing just above the umbilicus, and descending not quite so low as in the preceding case. The uterus was opened with considerable hæmorrhage. The child was extracted, breathed well, and weighed more than ( $6\frac{3}{4}$  lbs.) 3 kilograms. Pins, wires and deep sutures as before; pedicle placed in lower angle of wound, much higher up than in the former case; Lister's dressing. No accident followed, save an extraordinary acceleration of the respirations, 55 in the minute, at the end of twenty-four hours. She never attained so much as 38° C. (100° F.). Dressing changed first the fifth day, then on the ninth day. At the second dressing the pedicle had fallen; at the ninth dressing, at the end of January, there remained but a very superficial ulceration. She began to get up in February, and for a long time has been in good health. The child, confided to a nurse, is doing finely. In this woman the union is so perfect that one can see but few traces of the operation, though it is so recent.

Another woman was operated upon the 3d of December; she died on the 5th, thirty-six hours after the operation. The child lives.

A fourth case at the Cochin hospital was operated on the 17th of January, 1880. Sacro-pubic diameter of (1.9 inches) 49 millimeters. Very well at first, she had a violent nervous attack after four hours, and died at the end of twenty-three hours. The child lived three days.

The author observed that all those cases of pelvis with a sacro-pubic diameter of 6 centimeters or less, only comprise women exposed to an enormous mortality under cephalotripsy. Cases

which should not be confounded with those where the antero-posterior diameter approaches ( $2\frac{1}{4}$  inches) 7 centimeters.

M. Lucas-Championnière does not yet regard the Porro operation, as some have done, as worthy of replacing in all cases the Cæsarean operation.

The cause of death, as in hysterotomy, is inherent to resection of the uterus and its constriction, and the accidents observed are probably of a reflex order, due to shock to the nerves of the broad ligament. Consequently, except great modifications are made in the process, the operation remains one of menacing gravity. Up to the present time, no indications as to the mode of operating have been given. The author believes it easy to demonstrate, according to his own observations, that the abdominal incision should be made much higher than heretofore; one is much more sure of being able to make the dressing aseptic, in getting away from the pubis. This he obtained perfectly in the second case, and nearly so in the first one. The uterus is always incised too low. It would very probably be less grave if only a portion of moderate extent were cut away. The most perfect antiseptic precautions should be taken. It is probably more advantageous to the woman to interfere before labor. With antiseptic precautions, a specially clean locality is not necessary, as shown by the cure of his last patient in a badly-aired room, which had even served to isolate patients with contagious disorders. The operation requires isolation, warmth, repose, good care, incessant antiseptic precautions, and sufficient comforts; also skilled assistants.

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#### GYNÆCOLOGY.

DISPLACEMENTS OF THE UTERUS—A NEW THEORY OF THEIR MECHANISM AND TREATMENT, by Dr. G. Cowan, Kentucky, is communicated to the *American Practitioner*, 1879, and abstracted in No. 2 of *Centralblatt*, 1880. The author describes the different theories of the text-books respecting the uterine supports, and the origin of displacements by distension, relaxation, or shrinking of these supports, and concludes, on the ground of anatomical and logical investigations, that neither the

vagina broad and round ligaments nor the utero-vesical nor utero-sacral ligaments are to be looked upon as the primary supports of the uterus. For it can be proved experimentally that they are not put on the stretch until displacement has already occurred, and therefore when the uterus is in its normal position they are not tight, and accordingly cannot support the uterus. All these ligaments do is to retain the uterus in its proper axis. The power of support the author now finds in the direction of the intra-abdominal pressure, which, according to him, acts as follows: The intestines glide upon three planes in an arched line downwards and backwards—namely, first, the anterior surface of the 9th, 10th, 11th, and 12th dorsal vertebræ, the 1st, 2d, and 3d sacral vertebræ, and the adjoining lateral surfaces of the abdominal cavity; second, the lower anterior and inner surface of the abdominal cavity, and the inner surface of the symphysis and ossa pubis; third, the inner surface of the rami ischii, the anterior and upper surface of the perineum, and the adjoining surfaces of the vagina and of the rectum, to which, by the coccyx and sacrum, an upwards and backwards concave direction is given. The mobile abdominal viscera glide now from the first plane downwards and forwards upon the fundus uteri and bladder; from thence the pressure passes by the second surface downwards and backwards on the third plane, and from this directly upwards and somewhat backwards upon the uterus and its ligaments, which is therefore compressed by hydrostatic pressure from before and under against the rectum, and is kept in a floating position. The uterus is to be compared to the keystone of a reversed arch, but with the thick end of the stone upwards. The bowels press now upon the arched bladder; the uterus is pear-shaped, and is held down anteriorly by the vesico-uterine ligaments, together with the ligamenta lata and the anterior and posterior duplicatures of peritoneum kept in the axis of the pelvic inlet, and can escape from this pressure directed upon it forwards and under only in the upwards and forwards direction. Were the small end of the keystone directed upwards, as it would be in a reversed arch, this same pressure would displace the uterus downwards.

On this ingenious theory the author briefly bases his treatment. In conjunction with pessaries made according to Hodge's princi-



ple, he proposes in the case of displacements, mostly in multiparæ with relaxed abdominal walls, to replace the absent second plane, the tight anterior abdominal wall, by means of a tight, accurately-fitting binder, which in every displacement, and immediately after every delivery, is to be put on and worn until the abdominal wall has again recovered its tone. The relief which at any rate most women with uterine displacements feel in wearing such an abdominal binder, the author explains by pressing up of the uterus according to his theory, not, as hitherto, by the removal of the pressure of the bowels on the irregularly situated uterus.

THE DIAGNOSIS AND TREATMENT OF OBSTETRIC CASES BY EXTERNAL MANIPULATION, BY DR. PAUL MUNDÉ. Second Article. (*American Journal of Obstetrics*, October, 1879.)—We regret much to find that the brief note we added to our short abstract of the first part of this paper in the December retrospect has hurt the author's feelings. We have carefully re-read the paper, and are willing to confess we were somewhat mistaken in our idea of the object aimed at by Dr. Mundé, which we find was less to instruct obstetricians than to spread a knowledge of this useful branch of gynæcology among the profession. As we regard the papers to be extremely well calculated to effect this object, we now include some parts of the first paper not given fully enough in our first reference, along with an abstract of the second part of the paper.—[A. M.] The external method of manipulation is described, for diagnostic purposes, under four heads—inspection, palpation, percussion, and auscultation, and the information gained by each of these is minutely discussed. Under the head of inspection the author especially mentions the appearance, originally pointed out by Bandl, recognizable when there is some obstacle to the passage of the head, as in contracted pelvis, namely, a transverse furrow about midway between the umbilicus and pubis, due to the futile concentric contractions of the uterine body, when the cervix is jammed against the pelvic brim by the presenting part. He says he has himself seen the same phenomenon in excessive pelvic obliquity with consequent anteversion of the uterus. Under palpation Dr. Mundé advises that not the

tips of the fingers merely should be used, but that the palmar surfaces of all the fingers should be gently but firmly pressed into the abdominal parietes. By a "pawing" movement we get an idea of the general configuration of the uterus; by pressing deeply behind the uterus from above we ascertain the period of gestation; by moving the hands along side by side we may feel the mobile portions of the foetus; while by grasping the hypogastric region with the whole hand the presenting part, whether head or breech, is known. External ballottement will determine the amount of mobility of the foetus. Any abnormality of the uterus is also often easily detected thus, *e.g.*, subperitoneal fibroid tumors, uterus bicornis, etc. The regular intermittent contractions and relaxations of the uterus, described by Braxton Hicks as a sign of pregnancy, is also a late outcome of this practice of palpation. The movements of the foetus also serve to show the undoubted presence and life of the child, the probable quantity of amniotic fluid, and the approximate size and strength of the child. Rules are also given for guiding us to a knowledge of the presentation in a given case, whether head, breech, or transverse, and how the presence of twins may be predicted. The death of the foetus, the character of the uterine contractions, hydrocephalus, rupture of the uterus, and extra-uterine foetation, may all be made known in time for treatment when skill is acquired in the application of the method. From percussion we are enabled only to confirm information obtained by the other modes of procedure. From auscultation important data may be furnished, and of these the one of most value is the pulsation of the foetal heart, which has been heard in some cases as early as the fourteenth week of utero-gestation. The author recommends the method of immediate auscultation as giving more certain signs of the life or death of the foetus. Certain important aids to the diagnosis of the position and presentation of the foetus are also demonstrated to be obtainable from auscultation. In attempting to predict the sex of the foetus from the number of its heart-beats, the author suggests that we should remember that several modifying influences have to be taken into consideration—as the period since food was taken, the foetal pulsations being more rapid after meals—and the size of the child—the larger the child the fewer pulsa-

tions of its heart, and conversely, whatever be its sex. In a paper by Paul Budin and Chaignot, it is stated that there is no relation whatever between the weight, cardiac pulsations, and sex of the foetus. The general opinion of the later observers amounts to the possibility of a "shrewd guess" being made as to the sex of a coming child, but nothing more, and it would be unwise to hazard an opinion in any given case. Various opinions regarding the causation of the funic souffle are mentioned, one holding that it is due to pressure on the cord from twisting round the body, another that it is due to organic valvular disease of the foetal heart, a third that it results from rapid influx of blood from the small arteries into the disproportionately large cavities of the heart, while according to Schroeder it originates in the arteries of the cord at their junction with the body of the foetus. Another theory would have it generated in the umbilical vein. The practical deduction which the author draws from a consideration of all the possible theories is, that it indicates obstruction in some form to the foetal circulation, and he calls attention to the necessity of carefully watching both the foetal heart and the funic souffle, as any irregularity or growing indistinctness of the foetal heart, coupled with the persistency and increasing force of the souffle, points to some cause endangering the life of the child.

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#### OTOLOGY AND OPHTHALMOLOGY.

COMMUNICATION BETWEEN THE ENDO-AND PERI-LYMPHATIC CAVITIES OF THE LABYRINTH AND EXTRA-LABYRINTHINE INTRACRANIAL CAVITIES.—Weber-Liel: *Virchow's Archiv*, Bd. 77, 1879.—The uncertainty existing in regard to the communications of the two aqueducts of the labyrinth led Weber-Liel to attempt the solution of the question by what he calls the method by aspiration, as well as the old method by injection, and he seems to have met with perfect success in demonstrating that the aquæductus vestibuli is an endo-lymphatic passage in direct and free communication with a sac lying beneath the dura mater on the posterior aspect of the petrous bone, and that the aquæductus cochleæ is a peri-lymphatic passage in free communication with

the arachnoid cavity. The sac on the posterior aspect of the petrous bone, saccus intra-duralis or endo-lymphaticus, is of connective tissue, and enclosed in the tissue of the dura mater; it is from 12 to 18 mm. long and from 5 to 9 mm. broad in its normal condition, but is much diminished by pathological changes in the tissues of the dura mater. In sixty preparations it was found in every one, and may be regarded, therefore, as normal. On opening it the interior was lined with flat epithelium, but the question of whether it is in reality a serous sac remains to be settled. From this sac a membranous tube leads directly to the vestibule. To demonstrate that this tube communicated with the endo-lymphatic cavities of the labyrinth, Weber-Liel opened the membranous superior semi-circular canal, attached a glass tube to it, and connected this with an aspirator. The saccus intra-duralis was now laid open and filled with "Beale's blue," and suction exerted by the aspirator. The different steps of the operation, with the necessary cautions, are given in full. It was found that by this method both the sacculus of the labyrinth, all the membranous canals, and the ductus cochlearis, were filled with the coloring matter. The very free communication between the saccus intra-duralis and the endo-lymphatic cavities is also shown by the simple experiment of opening the superior semicircular canal so that the endo-lymph is exposed to view, and then pressing or using suction upon the sac, when the endo-lymph will be forced up through the opening in the canal or drawn back out of sight, showing both that the communication is very free, and also that during life any pressure or relaxation in the walls of the sac would influence the tension of the labyrinth itself. On the edges of this sac runs the vena aquæductus vestibuli, and the walls of the sac are surrounded by a network of vessels. To determine the connection of the peri-lymphatic cavities of the labyrinth two methods were used— injection into the arachnoid cavity, and aspiration from that cavity. By the former method the injected fluid entered the scala tympani of the cochlea, and also exuded through the perforated membrane of the fenestra rotunda; but as some of the fluid escaped between the dura and pia mater, it was uncertain whether it had entered the cochlea from the arachnoid cavity, and aspiration was then used, as in

the previous experiments. The whole anterior part of the preparation was immersed in the coloring matter, and suction on the opened semicircular canal exerted, with the result of depositing the coloring matter throughout the peri-lymphatic spaces of the labyrinth, but without coloring the porus acousticus internus, thus proving that the connection could not be that canal. The same experiment was tried by first filling the entrance of the aquæductus cochleæ with the blue, and here also the peri-lymphatic spaces only were filled with the coloring matter. The freedom of the communication through the cochlear aqueduct was also shown by filling its orifice with fluid, and then, by condensing and rarefying the air of the meatus, this fluid could be drawn inward or pressed outward. These experiments of Weber-Liel show, then, that the aquæductus vestibuli is a passage communicating and retaining the equilibrium between the endo-lymphatic cavities of the labyrinth and a sac situated within the dura mater, while the aquæductus cochleæ is a passage communicating and retaining the equilibrium between the peri-lymphatic cavities of the labyrinth and the sub-arachnoid cavity. The peculiar sense of pressure in the head (*Eingenommenheit*) experienced with many affections of the ear he would, in some cases, explain by the assumption that the labyrinthine fluids are forced by pressure through these passages into the cranial cavity, and thus exert pressure upon the brain; and the aural symptoms accompanying some diseases within the cranium he would explain in the opposite way, these passages allowing the fluid to be forced from the arachnoid cavity into the labyrinth. The whole series of experiments and their results are extremely interesting.

EXPERIMENTS ON THE INOCULATION OF THE CORNEA, IRIS, AND CONJUNCTIVA WITH TUBERCLE.—Hænsell, (*Græfe's Archiv*, XXV. 4, p. 1), has studied the changes produced in the cornea, iris, and conjunctiva of rabbits and guinea-pigs by inoculation with the fresh pus from tuberculous joints. This substance, injected into the anterior chamber in an aseptic condition, becomes absorbed in the course of a week. Then, after a period of incubation lasting twenty to thirty days, sudden swelling and hyperæmia of the iris, accompanied by ciliary injection, set in,

soon after which small gray points can be seen, which after some time become confluent, press upon, bulge forward, and eventually perforate the cornea, and finally undergo caseous degeneration. The whole process described takes three months in rabbits, in guinea-pigs only about half that time. Inoculation of the cornea directly by interstitial injection of the same pus produces, after fifteen to twenty-three days, severe ulceration with excessive development of blood-vessels, the whole being not unlike a pannus crassus as it occurs in man. Similar results to those which follow injection into the anterior chamber are obtained when the conjunctiva is selected for inoculation. In order to test whether the tubercles formed in the iris and conjunctiva possessed the same power of producing a general tuberculosis as other tubercular substances, they were introduced in two cases into the abdominal cavity, and in these the post-mortem examination, after three months, showed a miliary tuberculosis of all the internal organs. Hænsell has found, with Cohnheim, that any other substance introduced into the anterior chamber is incapable of producing the same effect; on the other hand, it was found possible to infect one animal from the artificially produced iris tubercles of another. In all cases of tubercle of the iris which have been observed in man the same course of events has been noted as in the inoculated tubercle of these animals, only the time taken for complete development is longer. Hænsell considers that the fact of there being a definite period of incubation, as well as that the organisms which Klebs looks upon as being the principal agents in the production of tubercle are constantly found in these neoplasms of the iris, shows that they constitute a truly zymotic disease.

ON THE DISTURBANCE OF VISION CAUSED BY INJURIES TO THE SKULL.—Dr. Berlin has collected a number of cases which have come under the observation of himself and others, in which amaurosis has followed severe blows on the head. In an interesting paper, read before the Ophthalmological Society at Heidelberg, he has given his views on this subject. These may briefly be summed up as follows: The amaurosis is in by far the greatest number of cases unilateral; it arises suddenly at the time of,



or immediately after the injury, and is generally complete and incurable. The injuries giving rise to the amaurosis are almost always severe, such, indeed, as generally give rise to loss of consciousness at the time, and may often be supposed to have caused fracture. The frequency of fracture of the roof of the orbit is very great, as may be seen from the statistics of Hölder. Of 126 cases of fracture of the base of the skull examined by him, 88 involved the base, in eighty, or ninety per cent., of which the roof of the skull was fractured. In fifty-four, or sixty per cent., the line of fracture passed through the walls of the foramen opticum, and this independent of the direction of the force producing the fracture. In the 54 fractures of the optic foramen Hölder found extravasation of blood into the sheath of the optic nerve 42 times. No extravasation into the sheath of the nerve was found in any case when the fracture did not involve the foramen. Taking into consideration, then, the severe nature of the injuries causing amaurosis, and the statistics of Hölder, Berlin is of opinion that the amaurosis in such cases is generally the result of injury to the optic nerve from fracture through the foramen.

**REMOVAL OF A FOREIGN BODY FROM THE VITREOUS CHAMBER BY MEANS OF A MAGNET.**—Hirschberg removed successfully a piece of iron 3 mm. long and 2 mm. broad from the vitreous chamber with an electro-magnet which he had constructed for the purpose. An incision was made in the sclerotic near where the foreign body was seen with the ophthalmoscope to lie. The magnet used can attract pieces of iron of 1 to 5 mm. in length from a distance of 2 to 4 mm. when placed free in vitreous humor. He concludes his account of the case with the following remarks on this method of operating: "The asserted possibility of removing with a magnet a piece of iron embedded in the cornea, as we see them daily in iron-workers, and which are so easily removed by mechanical means, must be looked upon as a fable, a counterpart to the tale in the Arabian Nights, of the magnetic island which attracted the nails from the planks of passing ships. For foreign bodies in the anterior chamber, the magnet is as a rule, superfluous and impractical; as soon as the aqueous humor escapes, and the piece of iron is pressed up against the posterior

surface of the cornea, it can easily be extracted with forceps, whilst extraction with a magnet is exceedingly difficult, as will be found by experimenting on rabbits. The triumphant cases for the magnet are only those in which, as in our case, the piece of iron has recently found its way into the eye and lies free in the vitreous; in such cases it could only rarely be extracted with forceps or scoop without producing lasting injury to the eye."—*Centralblatt f. Augenh.*, December, 1879.

ON THE SENSIBILITY OF THE ORGAN OF HEARING.—W. Kohlrausch. (Wiedemann's *Annalen*, 1879, No. 6; *Phil. Mag.*, No. 48, September.) With the aid of a toothed wheel working against a disk of metal or pastboard, Savart found that two impulses can make upon the ear the impression of a comparable tone. Exner (Pflüger's *Archiv*, XIII. p. 228), by means of tuning-forks vibrating before spherical resonators, finds that seventeen impulses—Pfaundler (*Wiener Berichte*, LXXVI. p. 572, 1877), by experiments on holed sirens and reflection-tones, that only two impulses—and Auerbach (Wiedemann's *Annalen*, VI. p. 591, 1879), that about twenty vibrations are necessary for the production of a tone in the physiological sense, the tone being determined to within the interval 100:101. Less sharply defined tones can be produced in a simple manner by but two impulses. Two fingers of the hand being held together so that the ends of the finger-nails are on a level, a blow is given therewith somewhat obliquely upon a table or board, the proper tone of which is deadened by loading it with books or some other heavy substances. It will be readily felt that the two fingers rarely strike simultaneously, and by a little attention there will be heard, with the noise of the blow, a very hollow tone of a pitch, which changes *per saltum* according to the position of the fingers, but which, by practice, can be approximately had at command. Similar tones are obtained by running the finger-nails over short lengths of ribbed paper.

A RARE FORM OF OPACITY OF THE CORNEA.—In this paper (Knapp's *Archiv*, IX. 2, p. 184) Dr. Nettleship gives an excellent description of a traverse opacity, which occurs rarely and under

circumstances still imperfectly understood, in the cornea of old people. The description given differs slightly from that given by Græfe in one of his well-known papers on glaucoma. Whereas Græfe seems always to have observed the opacity to begin in two separate portions at the inner and outer margins of that part of the cornea which is uncovered by the lids, and gradually extend until they met over the center of the pupil, Nettleship has seen the process begin as frequently in the center, and is of opinion that the margins of the cornea always remain free. Further, Græfe has associated these cases constantly, sooner or later, with secondary glaucoma, whilst Nettleship believes that they are sometimes primary, uncomplicated corneal changes. A number of valuable suggestions are thrown out as to the possible etiology of this curious condition. These are preceded by a careful examination of all the causes which might be supposed to influence its occurrence in any way. The opinion of the author seems to be that some constitutional or trophic conditions favor the gradual alteration in the most exposed part of the cornea, where the opacity is invariably situated. The treatment advocated and adopted with success is the scraping away of the opacity from the center of the pupil. A recurrence after this operation does not appear to take place. It will be remembered that V. Græfe recommended iridectomy.

ON THE CHORDA TYMPANI NERVE.—Horatio B. Bigelow. (*Archives of Medicine*, June, 1879.) The author presents the result of an anatomical and physiological investigation of the chorda tympani nerve in rabbits and dogs, instituted during the spring and summer of 1875. He is led to take issue with the views entertained by Prof. Sappey (*Traité d'Anatomie descriptive*) respecting the course and function of this nerve. He says: "To me there seems to be no doubt that the special sensory function of the facial filaments is derived from the nerve-cells in the intumescencia gangliiformis found upon the nerve of Wrisberg in the aquæductus Fallopii. The chorda tympani sends branches to the lingual just after becoming joined to it in the common sheath between the pterygoid muscles. It is so well nigh impossible to separate these connecting filaments, and so closely

apposed to each other are the two trunks, that I am perfectly aware of the unsatisfactory nature of the dissections; but yet, by means of the glass, I was able to identify so many branches of the chorda tympani passing to the lingual, and so satisfactorily, for a considerable distance, demonstrated the integrity of each nerve, that I feel convinced that at no very distant day it will be proven conclusively that these nerves are not joined fibril to fibril, but that they pass together in one sheath, the lingual receiving branches from the chorda tympani, which, in turn, is made sensory through the ganglion upon the nerve of Wrisberg."—*American Journal of Otology*, Vol. II, No. 1.

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## THERAPEUTICS.

THE TOPICAL USES OF ERGOT.—Dr. W. C. Dabney, in an article in the *American Journal of the Medical Sciences*, July, 1879, calls attention to the local use of ergot in various affections. In chronic conjunctivitis, in which the vessels are enlarged and tortuous, he advises the frequent cleansing of the eye with warm water, and the instillation after each washing, of a few drops of the following solution: Ergot (solid extract) gr. x, glycerin  $\mathfrak{z}$ i; water to make  $\mathfrak{z}$ i. This treatment is less applicable in cases in which there is much pain or intolerance of light. In pterygium the same solution may be used with advantage. In cases of pharyngitis, when the vessels are enlarged and tortuous and there is not much secretion, and in hypertrophy of the tonsils the following solution should be painted on the parts twice a day: Ergotin, gr. xx; tincture of iodine,  $\mathfrak{z}$ i; glycerin to make  $\mathfrak{z}$ i. In cases of cervical metritis, ergot and belladonna may be combined in the following proportions to form pessaries: Ergotin (or solid extract of ergot), gr. xx; extract of belladonna, gr. ii; cocoa butter, q. s., mix and make into six pessaries; one to be inserted into the vagina every night, after using the hot douche. In warm weather these remedies may be dissolved in glycerin and water, as in this formula: Ergotin, gr. iii; extract of belladonna, gr. vi; water and glycerin,  $\mathfrak{a}\mathfrak{a}$   $\mathfrak{z}$ iv; mix. A pledget of cotton is to be saturated with this solution,

and inserted into the vagina at bed-time, after the hot douche; the cotton should be removed in the morning. Dr. S. Eldridge mentions in the *New York Medical Journal*, October, 1879, several other affections in which the local application of ergot is beneficial. He treated an obstinate case of acne rosacea, occurring on the nose of a young lady, by the use of ergotin, applied during the night upon lint; in three weeks there was much improvement, and in six months no trace of the disease was visible. In another case of the same affection, due to drinking, he injected two or three minims of the following preparation of ergotin into the substance of the skin at intervals of three days, having first softened the tissues as much as possible by several days' continuous poulticing: Ergotin, gr. xv; glycerin, gr. xxx; water, ℥ii; thoroughly triturate and strain. No suppuration occurred. Thirty injections were made, and in four months the nose was almost natural in appearance. Dr. Eldridge also gives details of some cases of gonorrhœa and granular urethritis which he has treated by ergotin locally, with marked success. The remedy may be introduced into the urethra either by means of the ointment syringe or rubbed into the meshes of a cylindrical hollow lamp-wick, which is supported by a small bougie passed into its center, this swab being allowed to remain in the urethra for about half an hour. In an old standing case of otitis media, accompanied by destruction of the membrana tympani, large granulations and profuse discharge, ergotin was applied directly with a camel's hair pencil, after having been diluted with sufficient glycerin to make it flow easily; the result was satisfactory, the granulations having shrunk rapidly, while the discharge disappeared and the sensitiveness abated. The author also suggests that in eczema, vaginal leucorrhœa and nasal catarrh the topical application of ergotin should prove of value.—*The London Medical Record*, January 15, 1880.

## ANNOUNCEMENTS FOR THE MONTH.

## SOCIETY MEETINGS.

Chicago Medical Society—Mondays, June 7 and 21.

West Chicago Medical Society—Mondays, June 14 and 28.

## CLINICS.

## MONDAY.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Prof. Holmes; 3 p. m., Otological, by Prof. Jones.

Mercy Hospital—2 p. m., Surgical, by Prof. Andrews.

Rush Medical College—2 p. m., Dermatological and Venereal, by Prof. Hyde; 3 p. m., Medical, by Dr. Bridge.

Woman's Medical College—2 p. m., Dermatological and Venereal, by Prof. Maynard; 3 p. m., Diseases of the Chest, Prof. Ingals.

## TUESDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.

Mercy Hospital—2 p. m., Medical, by Prof. Quine.

## WEDNESDAY.

Chicago Medical College—2 p. m., Eye and Ear, by Prof. Jones.

Rush Medical College—3:30 to 4:30 p. m., Diseases of the Chest, by Dr. E. Fletcher Ingals.

## THURSDAY.

Chicago Medical College—2 p. m., Gynæcological, by Prof. Jenks.

Rush Medical College—3 p. m., Diseases of the Nervous System, by Prof. Lyman.

Eye and Ear Infirmary—2 p. m., Ophthalmological, by Dr. Hotz.

Woman's Medical College—3 p. m., Surgical, by Prof. Owens.

## FRIDAY.

Cook County Hospital—2 to 4 p. m., Medical and Surgical Clinics.

Mercy Hospital—2 p. m., Medical, by Prof. Davis.

## SATURDAY.

Rush Medical College—2 p. m., Surgical, by Prof. Gunn.

Chicago Medical College—2 p. m., Surgical, by Prof. Isham; 3 p. m., Neurological, by Prof. Jewell.

Woman's Medical College—11 a. m., Ophthalmological, by Prof. Montgomery; 2 p. m., Gynæcological, by Prof. Fitch.

Daily Clinics, from 2 to 4 p. m., at the Central Free Dispensary, and at the South Side Dispensary.



